

DIGITAL RECORDING SYSTEM

user manual

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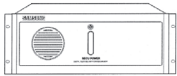
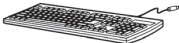







key features of your DVR

The SHR-9816/9716 compresses up to 16 video input signals using an advanced MPEG4 codec and up to 16 audio input signals using ADPCM for real-time simultaneous storage and playback from the hard drive. This unit is also capable of streaming these signals across various networks for remote monitoring.

- 16-Channel BNC Video Input Connectors
- NTSC/PAL Video Source Compatible
- Recording speed: 480 ips (NTSC) / 400 ips (PAL) using CIF resolutions (352x240 NTSC / 352x288 PAL)
- Supports hard drive overwrite mode.
- Supports USB 2.0 backup devices.
- Supports remote monitoring via Windows Network with SPR Smart Viewer.
- Record and playback 16 audio channels.
- Includes various recording options/triggers (continuous, motion, object watch, sensor, POS, video loss, and 1 ch. instant recording)
- Alarm Interface (Input: 16, Output: 4)

WHAT'S INCLUDED WITH YOUR DVR

Please ensure that the following components are included within the box. Contact your retailer if any of the components are missing.

				
SPR Smart System	Keyboard	User Manual	Keys	SPR Smart Viewer Program CD
				
Power Cable	Mouse	Audio Cable	System Recovery CD	

safety regulations

Please adhere to these safety regulations for the proper use of the product and to prevent risk/damage to you or the unit.

- **Do not use more than one multi-plug.**
Using too many multi-plugs can cause abnormal heat generation or fire.
- **Do not place sources of liquids near the DVR. ie: vases, cups, medicine, etc.**
Liquids can present a fire hazard.
- **Do not bend the power cord forcibly nor put a heavy material on it.**
This action could lead to a fire.
- **Do not operate or setup the DVR with wet hands.**
This can cause a serious injury by an electrical shock.
- **Firmly insert the power plug into the socket so that it does not shake.**
An imperfect connection presents a fire hazard.
- **Protect the DVR from humidity, dust, or soot.**
They can cause a fire or an electric shock.
- **Do not put metals (coin, hair pin, metal piece, etc.) or inflammable materials (match, paper, etc.) in the ventilation hole.**
These obstructions can cause abnormal heat generation or fire.
- **Keep the surrounding temperature between 0°C to 40°C and keep the product off humidity.**
Excessive temperatures can cause the DVR to malfunction.
- **Provide sufficient ventilation.**
This will prevent abnormal operation due to high temperatures.
- **Keep the unit out of direct sunlight and away from any other sources of heat.**
These sources of heat can cause abnormal heat generation or fire.
- **Do not disassemble, repair, or remodel the product.**
This may cause fire, electric shock, or injury due to abnormal operation.
- **Do not pull out the power plug by the power cord.**
This may destroy the power cord, eventually, cause fire or electric shock.
- **Unplug the unit during thunder or lightning.**
A power surge can damage the unit.
- **Keep children away from the unit or it's components.**
The unit's components present a choking hazard. Contact a doctor immediately if a component has been swallowed.
- **Install the product at a safe place so that there is no risk the DVR can be knocked or fall to the ground.**
An insecure DVR positioning can cause physical harm or damage to the unit.



before start

This user manual provides information that are necessary in the use of the DVR, ranging from a brief introduction of the product to names, functions, and connection instructions of the components, menu configurations, and other information pertinent to product use. Please read and adhere to the following notices.

- SEC retains the copyright on this manual.
- This manual cannot be copied without prior written approval from the SEC.
- Samsung Electronics will not be held responsible for damages caused by the improper use of the product or the use of non-specified equipment with the product.
- If you want to open the case of your system for any reason, please consult the installer or the retail outlet which you brought the product.
- Source codes are available for download at: <http://www.samsung.com>
- Check compatibility before attempting to install any internal devices (memory, HDD).
A list of compatible devices can be obtained from your vendor.

WARNING

System Shutdown

Turning off the power while the product is in operation, or taking not permitted actions may cause damage to the hard drive or the product. Also it can cause a dysfunction to the system installed on the hard disk.

Please turn off the power using the **Power (⏻)** button on the front of your **DVR**. After selecting **OK** in the pop-up menu, you can pull out the power cord.

You may want to install a UPS system for safe operation in order to prevent damage caused by an unexpected power surge/loss. (Any questions concerning UPS, consult a UPS retailer.)

Make sure that the mains plug is not covered or obstructed by any object.

The unit must be connected to an outlet with a protective ground connection.

CALIFORNIA USA ONLY

This Perchlorate warning applies only to primary CR (Manganese Dioxide) Lithium coin cells sold or distributed with products in California USA.

Special handling for perchlorate material may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate

Operating Temperature

The operating temperature range of this product is 0°C to 45°C (32°F to 113 °F).

Operating the DVR outside the temperature range can cause the unit to malfunction.

If the unit was stored outside the operational temperature range, allow the unit to return to room temperature before operating.

The HDD operating temperature is 5°C (41°F) to 55°C (131°F).

The HDD like the DVR may malfunction outside of these temperatures.

STANDARDS APPROVALS



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The rechargeable battery incorporated in this product is not user replaceable.
For information on its replacement, please contact your service provider.

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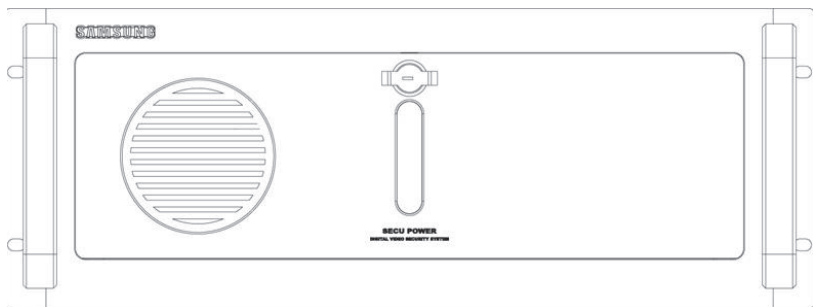
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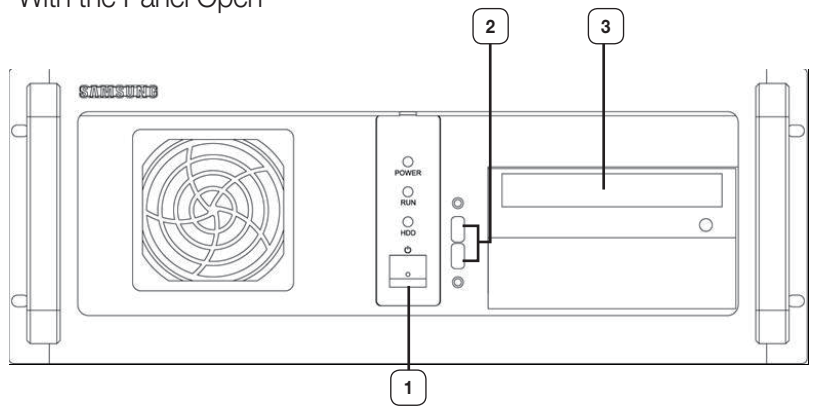
introducing your real time DVR

DVR: Front View


With the Panel Closed



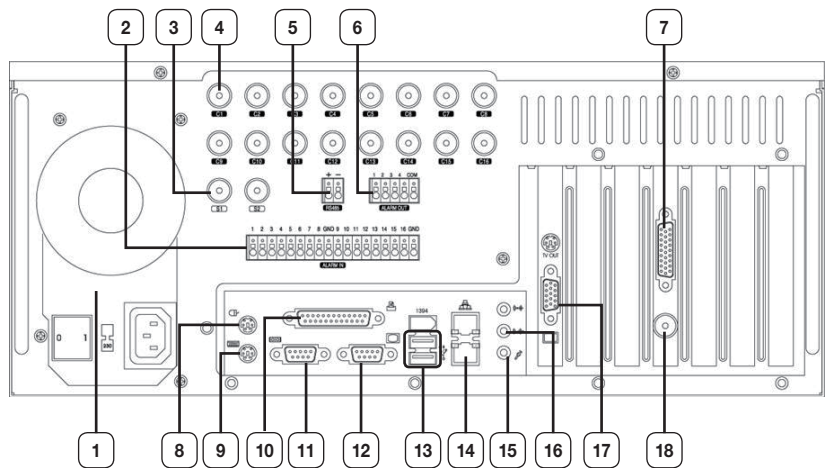
With the Panel Open



1	Power	2	USB
3	DVD-RW		

 • Front and rear configurations of the system may change to reflect changes in specifications or other quality improvement purposes.

DVR: Rear View



1	Power Supply (AC 100-240V, 60/50Hz, 4A/2A)	2	Sensor Input (Alarm-In) Ports (16 ports)
3	Spot Monitor Out Ports (2 ports)	4	Camera Video Input Ports (16 ports)
5	RS485 Port	6	Alarm-Out Ports (4 ports)
7	Audio Input Port	8	Mouse Input Port (PS/2)
9	Keyboard Input Port (PS/2)	10	Printer Port (LPT1)
11	COM Port (COM1)	12	Internal VGA Port
13	USB Port (Ver. 2.0)	14	Ethernet Port (100 Mbps)
15	Microphone Input Port (two-way audio input)	16	Audio Output Port (speaker connection port)
17	VGA Port	18	Spot Monitor Out Port (supports 16-screen)

installation

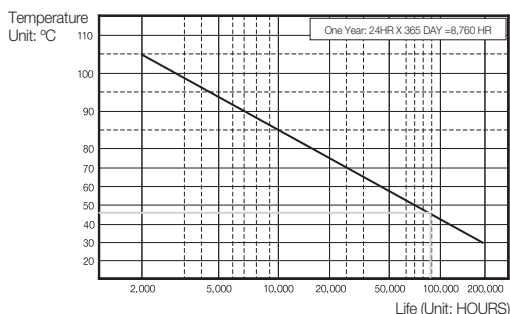
CHECKING INSTALLATION CONDITIONS

Adhere to the following precautions when installing the unit.

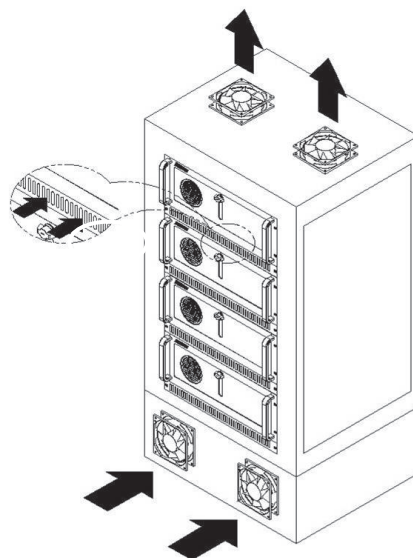
- Indoor use only.
- Prevent water and liquids from coming in contact with the unit's terminals.
- Protect the unit from excessive impact and force.
- Do not forcibly pull on the power cable.
- Do not open or disassemble the unit.
- Use within the rated power input/ output range only.
- Use an approved power cable only.
- For products that require a ground source always use a plug that includes a ground pin.

TEMPERATURE CONDITIONS

Samsung's Digital Video Recorder is an advanced security system that contains a high-capacity hard drive and other critical circuitry. Carefully follow the installation instructions to prevent high internal or ambient temperatures, which can lead to a shortened lifespan or malfunction of the unit.



[Graph: Correlation between Temperature and Product Lifespan]

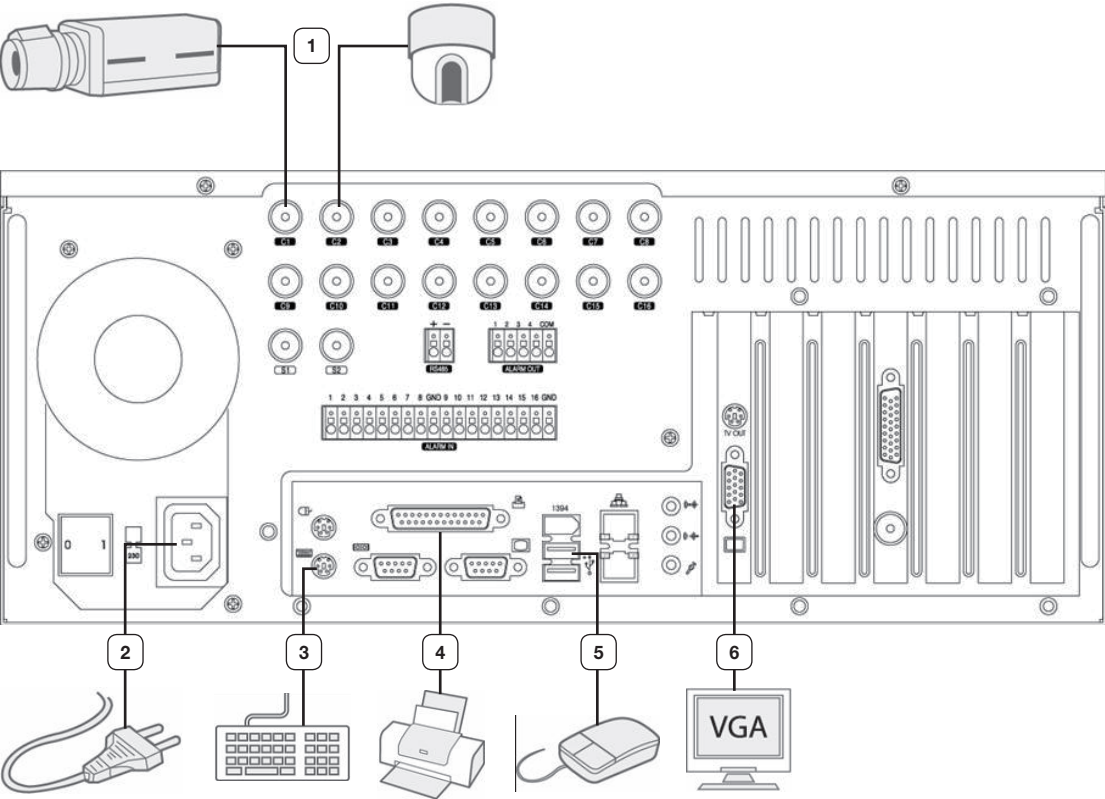


Recommendations for Mounting into a Rack

1. The inside of the rack must not be enclosed.
2. The rack must feature ventilation ports to provide sufficient internal air circulation, as shown in the diagram above.
3. Allow sufficient space between the DVR unit and other modules mounted to the rack or install ventilation ports to facilitate air circulation, as shown in the diagram.
4. Install the intake ports at the bottom of the rack and exhaust ports at the top of the rack to facilitate the formation of a natural convection airflow.
5. SEC strongly recommends the installation of fans at both intake and exhaust ports. Intake fans should be installed with a filter to block dust and other foreign materials.
6. An ambient temperature range of 0°C to +45°C must be maintained inside the rack.

connecting with other devices

BASIC CONNECTION



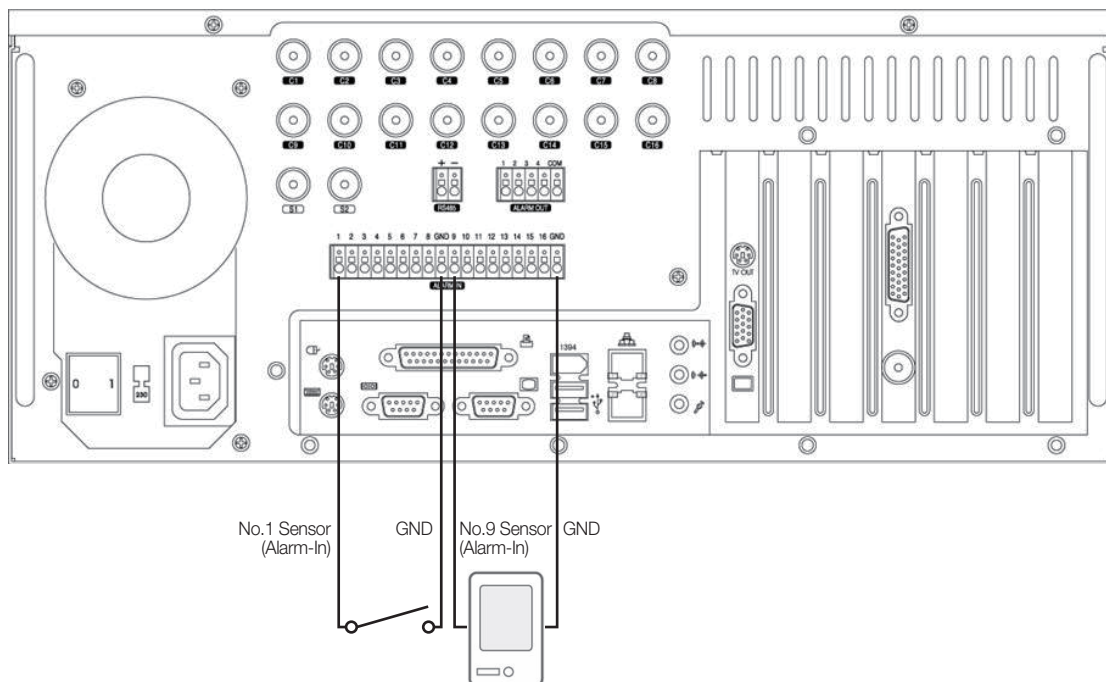
- | | | | |
|---|--|---|---|
| 1 | Using a coaxial cable, connect a camera(s) to the BNC port(s). | 2 | Attach the appropriate power cord to the power supply unit. |
| 3 | Connect a keyboard to the PS/2 port. | 4 | Connect a printer to the LPT1 port. |
| 5 | Connect a mouse to a USB port. | 6 | Connect a VGA monitor to the VGA port. |



Warning

- Ensure the correct rated voltage is provided before powering the unit. Improper voltage may cause malfunction and/or permanent damage to the system.
- Electrical Hazard: Please carefully read through the Safety Warnings and Precautions section.

SENSOR (ALARM-IN) CONNECTION

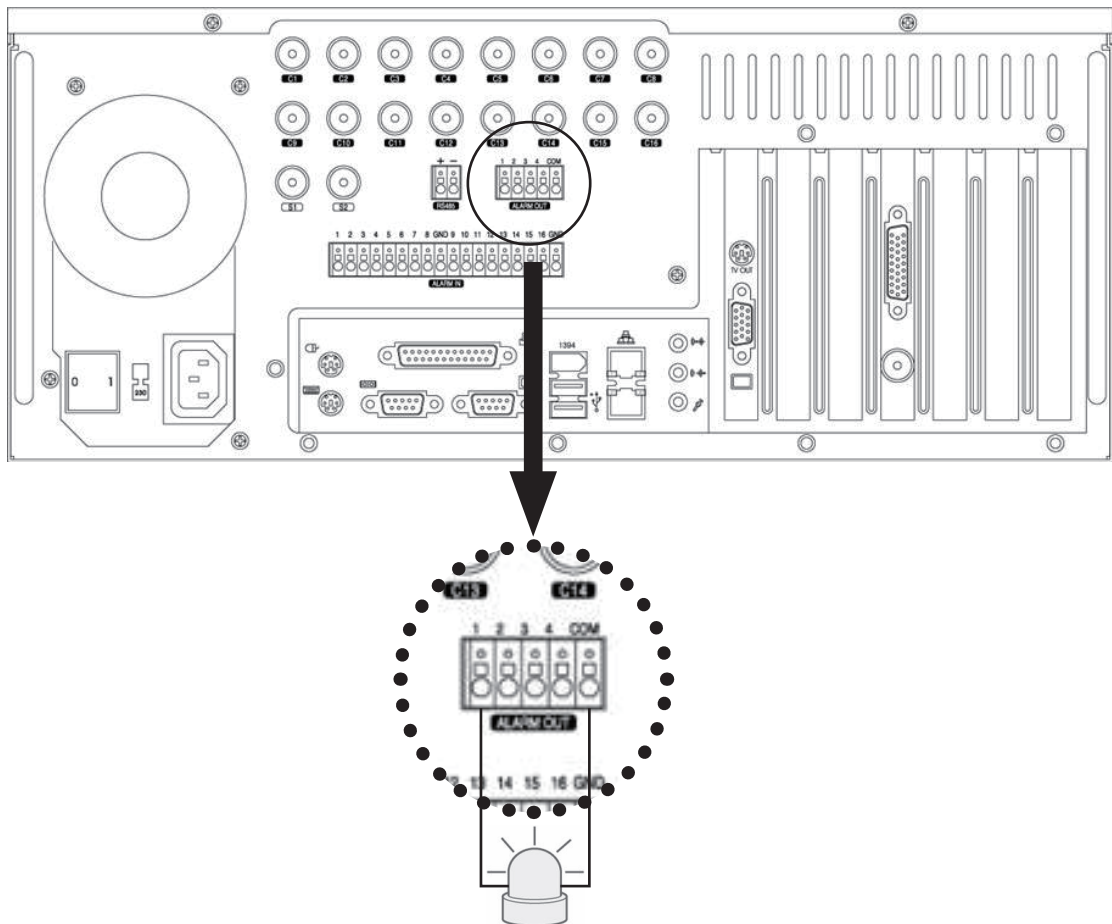


Your DVR system is capable of transmitting electrical signals to external devices when an event occurs. Mechanical or electrical switches can be connected to the Alarm-In and Ground (GND) ports. The individual Alarm-In ports can be configured from the System Setup menu as either NC (Normal Close) or NO (Normal Open).

Alarm-In Connection

1. Connect one of the external device's signal lines to the desired Alarm-In port.
2. Connect the remaining line to the Ground port (GND).

ALARM (ALARM-OUT) CONNECTION



Your DVR system is capable of activating warning lights, sirens, and other types of external devices. External devices can be connected to the unit's Alarm-Out and COM ports.

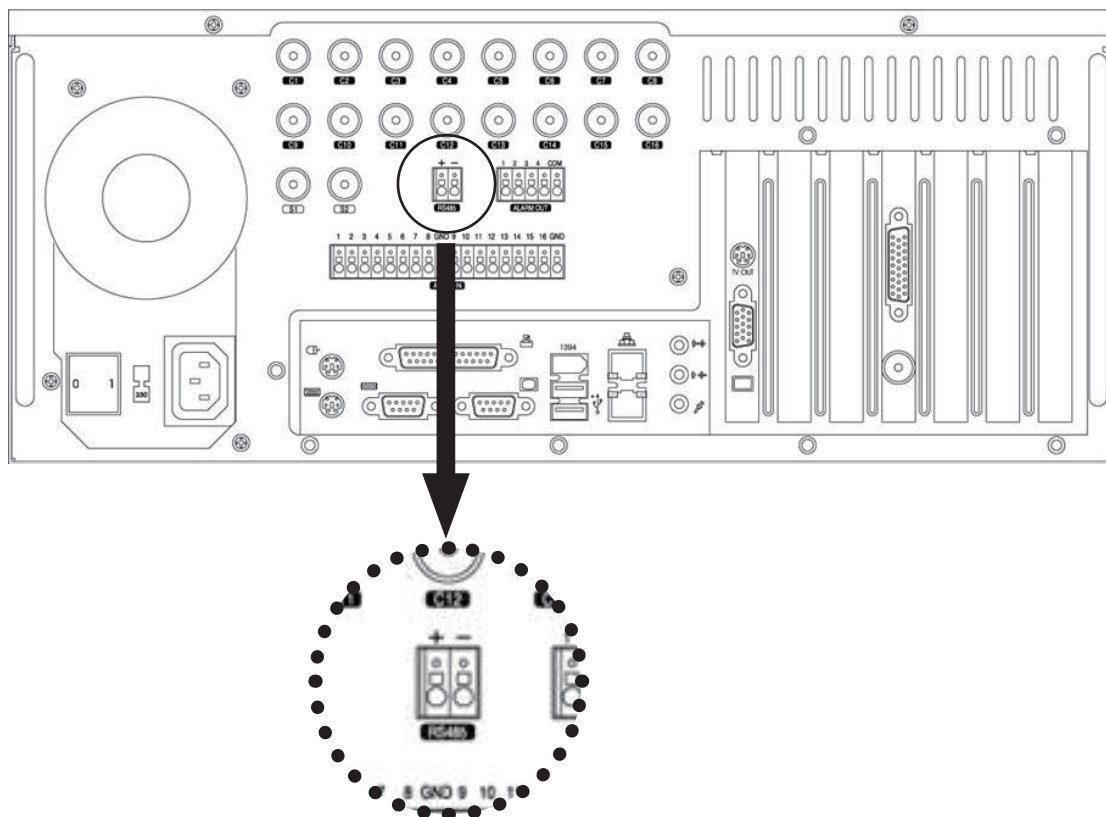
Alarm Connection

1. Connect one of the external device's signal lines to the desired alarm (Alarm-Out) port.
2. Connect the remaining line to the COM port.



- The alarms (Alarm-Out) operate in conjunction with the sensors (Alarm-In). When an event signal is received through a sensor, an electrical signal is transmitted from the corresponding alarm to activate the external device connected to that alarm.
- Alarms can be configured to function in unison with motion detection, video loss, object detection, and other software features.

RS485 CONNECTION



It's possible to control an external device by the DVR using the RS485 interface for communication.

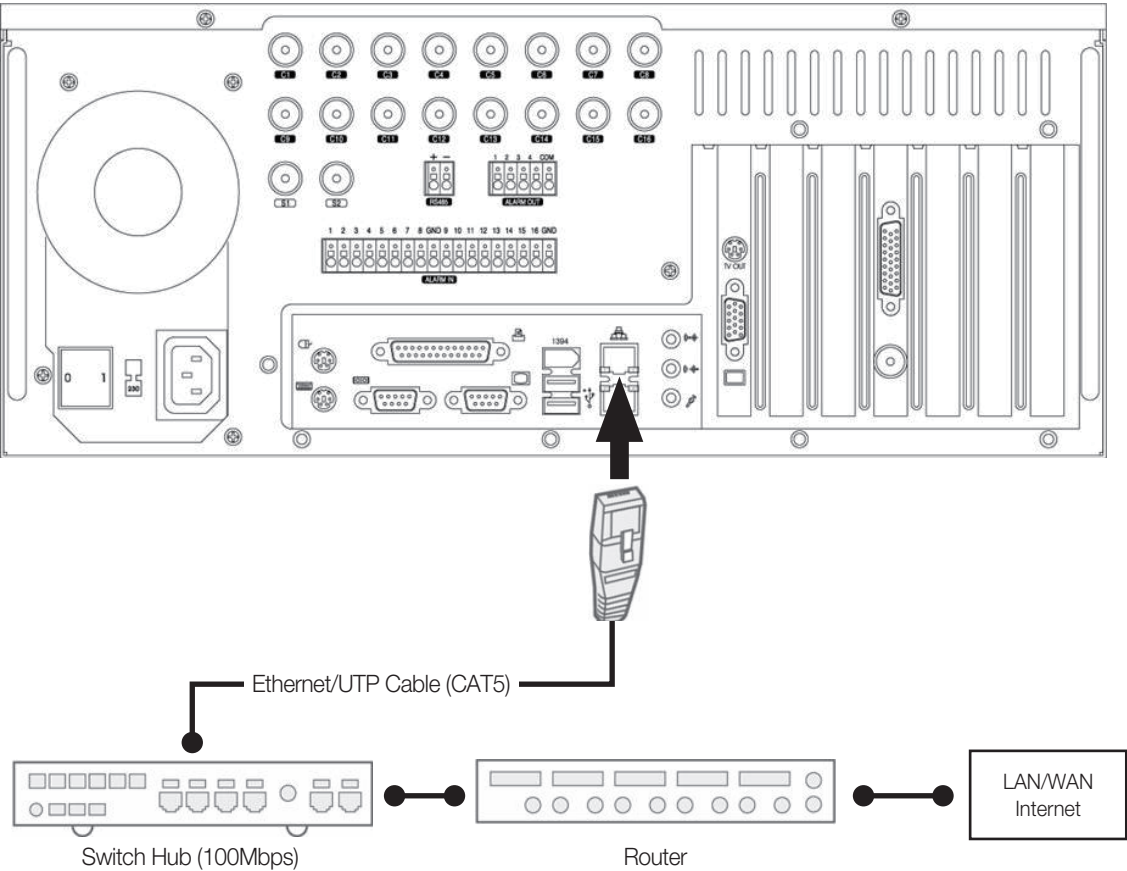
The RS485 port can be used to control PTZ cameras, speed domes, keyboard controllers and other types of external devices.

Connect the RX+/TX+ & RX-/TX- of the external device to the + & - of the RS485 port respectively.



- Check the polarity (+/-) when making the connection. Faulty wiring can damage both devices.
- Electrical Hazard: Please carefully read through the Safety Warnings and Precautions section.
- It's not possible to connect a PTZ device and a keypad device (SSC-2000) to the RS485 port and use the two devices at the same time. In order to use a PTZ device with a keypad or another type of external device, you will need to install a separate COM port expansion card.

NETWORK CONNECTION



Your DVR system supports network-based remote monitoring, remote search, remote control, and remote software upgrade. SEC recommends the use of the TCP/IP protocol and a switching hub for LAN/WAN applications.

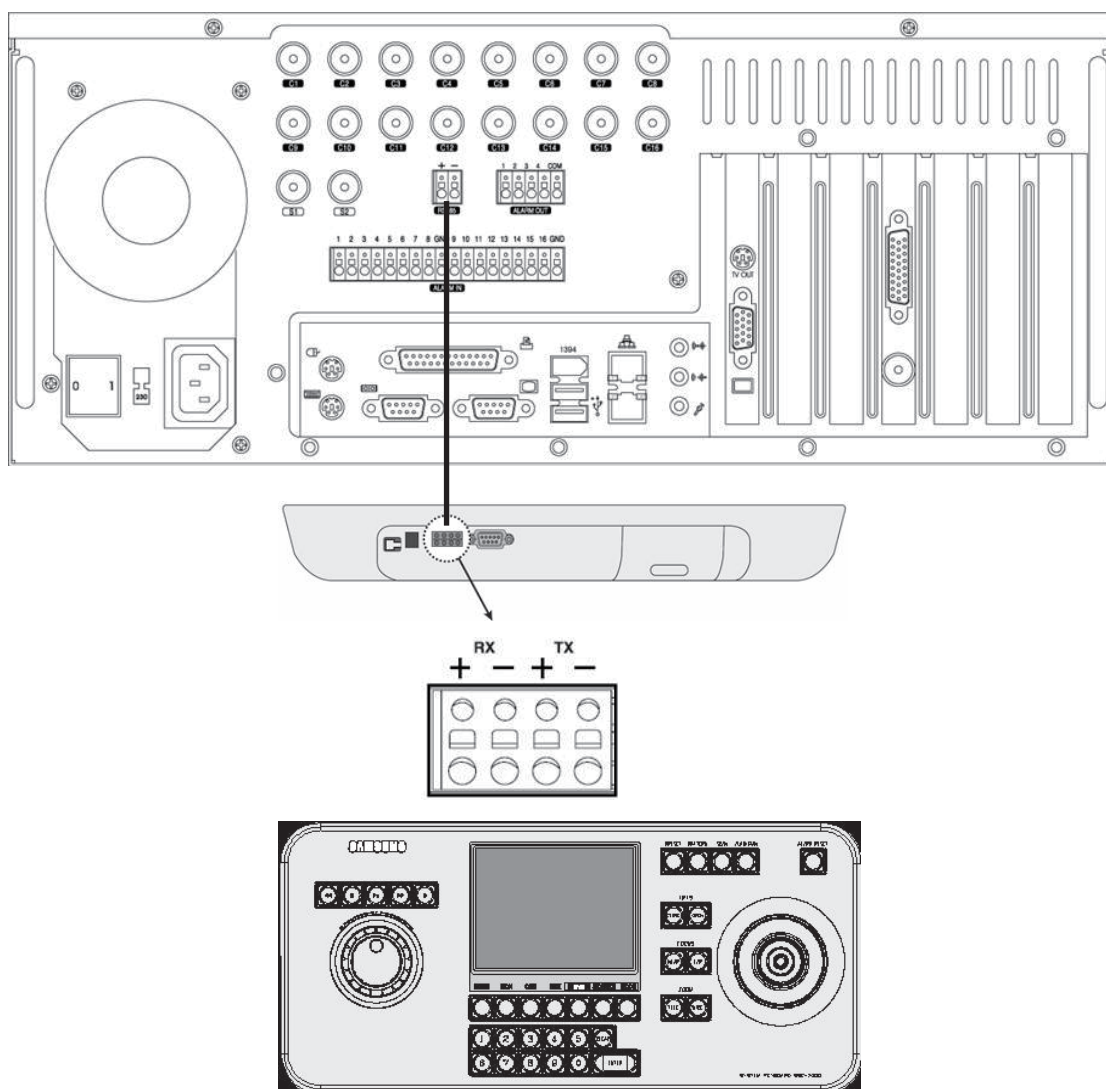
Network Cable Connection

1. Connect a Ethernet/UTP cable to the network port located at the rear of the system.
2. Connect the opposite end of the Ethernet/UTP cable to the switch hub.



- Before connecting your DVR system to the network, please contact your network administrator to prevent the system from causing a network conflict.

EXTERNAL KEYPAD CONNECTION



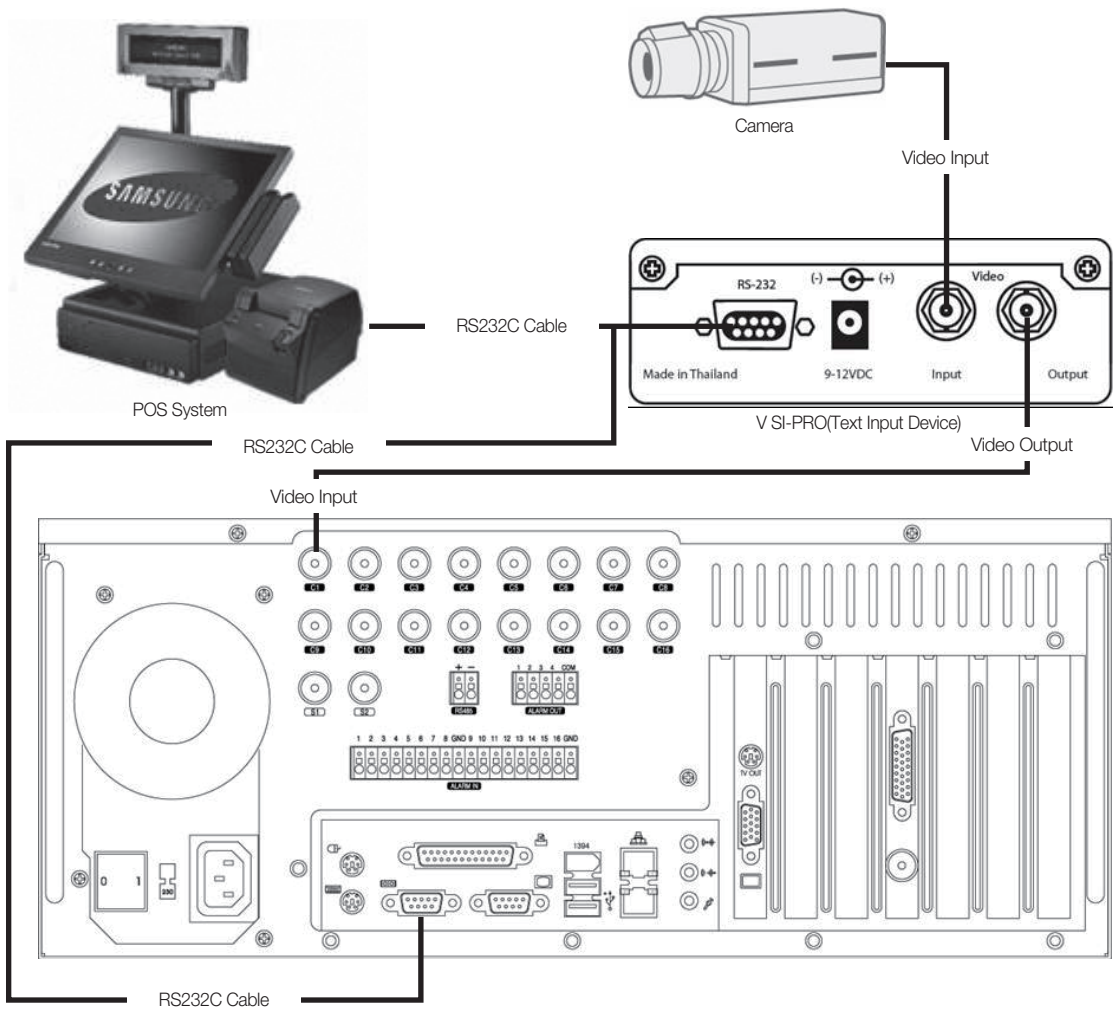
The SSC-2000 keypad can be used to control up to 255 DVR and PTZ units.

Connect the DVR's RS485 (+/-) port to the SSC-2000 keypad's RS485 port.



- Turn the power off both units while connecting the SSC-2000.
- Pay attention to the polarity of the RS485 connections.
- Refer to the SSC-2000 manual when attempting a RS232 connection.
- When using a keypad device, please ensure that communication settings for both the DVR and the keypad device are the same. Communication settings mismatch can prevent the keypad device and the DVR from making normal communication. (Set communication protocols for both the keypad and the DVR as Half Duplex.)
- It's not possible to connect a PTZ device and a keypad device (SSC-2000) to the RS485 port and use the two devices at the same time. In order to use a PTZ device with a keypad or another type of external device, you will need to install a separate COM port expansion card.

POS DEVICE CONNECTION



Your DVR system is capable of operating in conjunction with POS systems, enabling you to store and search video transactions at the point of sale. AVE's VSI-PRO is needed to connect the POS device to the DVR. For details on connecting VSI-PRO with your DVR, please refer to VSI-PRO's user manual.



- VSI-PRO by AVE (www.americanvideoequipment.com) is a device that transmits all text data received from POS device to the DVR via the RS232C interface.
- Turn off the power to all devices when connecting the POS device, VSI-PRO, and the DVR.

LIVE WATCH SCREEN

Live Watch supports full screen and various split-screen configurations. From Live Watch, you will be able to control PTZ, perform 1ch instant playback and make a backup. The buttons located within the watch screen also provide access to the other menus.(search, setup, etc).



- 1 Video Display Window**
Displays the live video feeds on screen. Simply drag and drop a camera channel to move a video feed.
- 2 Split-screen Buttons**
These buttons indicate 4-, 6-, 9-, 10-, 13-, and 16-split screen modes. Continue clicking on the same mode to sequentially cycle through the other camera channels in the same split.
- 3 Switch Screen/Full Screen/Switch to Live/Instant Recording.**
Switch Screen (Icon): Automatically cycles through the video feeds.
Full Screen (Icon): Expands the video feeds to a full screen view.
Switch to Live (Icon): Reverts a 1-channel playback screen back to the live feed screen.
Instant Recording (Icon): Starts the instant recording of the selected channels. In the event of an emergency, clicking on this button initiates selected camera channels to start continuous recording
- 4 Resource/PTZ/Playback/Log**
Resource: Select and view the status of cameras,

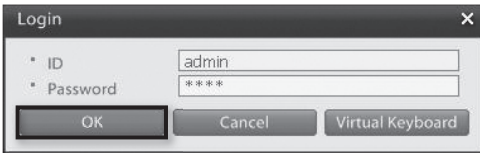
- sensors, alarms, and other devices connected to the DVR.
- PTZ:** Displays PTZ controls.
Playback: Displays the controls for 1 channel playback.
Log: Displays information on the 100 most recent events that have transpired during DVR system operation.
- 5 Clock**
Displays the current time of your DVR system.
 - 6 Menu Buttons**
Watch: Accesses the Live Watch screen.
Search: Accesses the Search screen.
Advanced Search: Accesses the Advanced Search screen.
Backup: Accesses the Backup screen.
Setup: Accesses the System Setup screen.
Exit: Terminates the DVR program/system.
 - 7 Login/Logout**
Launches the login window for user ID and password entry.
 - 8 USB Connection and Remote Connection**
Displays the connection status of the USB storage device and the connection status of a remote PC. Blue icon indicates a connected status.
 - 9 Hard Drive Capacity**
Displays the total hard drive space of the system, the amount of space used, and the amount of space available.

LOGIN SCREEN

Entering authorized user ID and password gives access to search features, system setup, and other system functions. Entering an incorrect user ID and password, however, will result in limited DVR functionality and control access.

Logging In

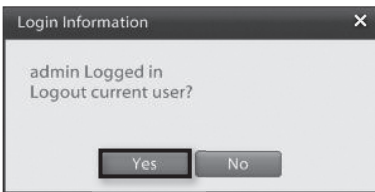
1. Click on the  button.
2. Enter the user **ID** and **password**.



3. Click **OK** to login.

Logging Out

1. Click on the  button.
2. Login information window will prompt displaying information about the active login account.



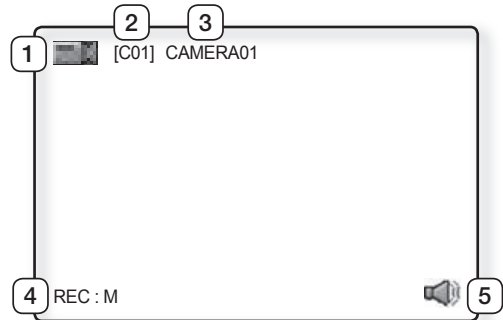
3. To log out from this user click the **Yes** button.





- From the factory, the default admin password is set as 4321.
- Admin account password cannot be changed without knowing the current admin account password; therefore, it is important that you do not lose it. Administrators should separately record and manage their registered password.

CAMERA CHANNEL

Camera Channel Display Icons



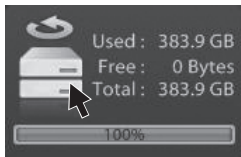
- 1 Camera Type**
Indicates whether the camera is a normal camera or a PTZ camera.
 Indicates a normal camera.
 Indicates a PTZ camera.
- 2 Channel Number:** Indicates the channel number of the camera.
- 3 Camera Designation:** Displays the camera's designation.
- 4 Recording Mode:** Displays the camera's recording Mode.
- 5 Live Audio:** Indicates that audio output has been activated for the channel.

Recording Modes	On Screen Indication
Not Recording	No Indication
Continuous Recording	REC: C
Motion Recording	REC: M
Object Detection	REC: W
Recording	REC: S
Sensor (Alarm-In)	REC: P
PreAlarm Recording	REC: \$
POS Recording	
Instant Recording	REC: I
Video Loss	REC: L

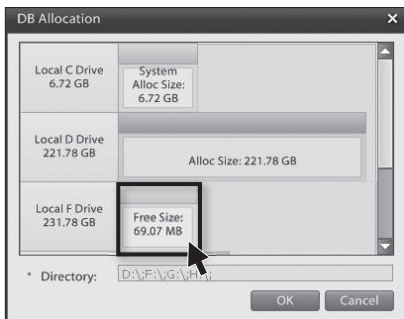
DATABASE DRIVE ALLOCATION

Allocating a New Database Drive

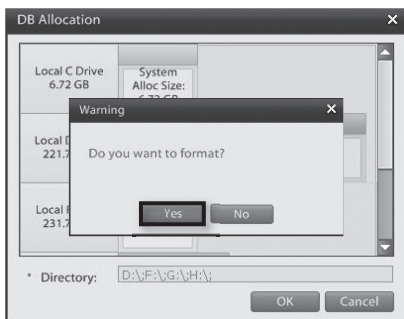
1. Login as an administrator then double click on the  icon.



2. You will then be prompted with the Database Drive Allocation window.

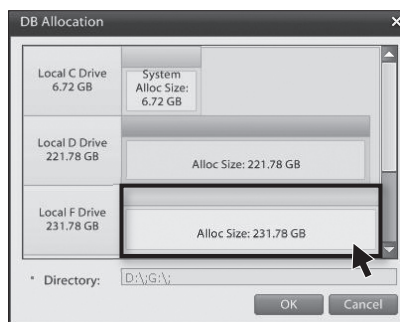


3. Left-click on a non-allocated drive (Free Size) and you will be prompted with a **"Do you want to format?"** warning window. Click the **Yes** button to initiate formatting and the allocation of a new database drive.

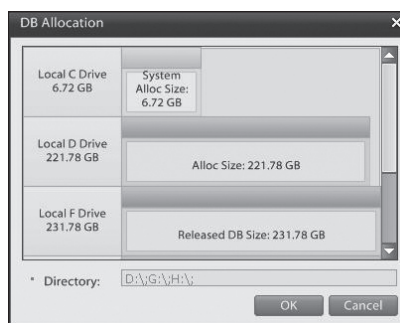


Disabling an Allocated Database Drive

1. Right-click on the allocated drive you wish to disable.
The drive color will turn from blue to grey.



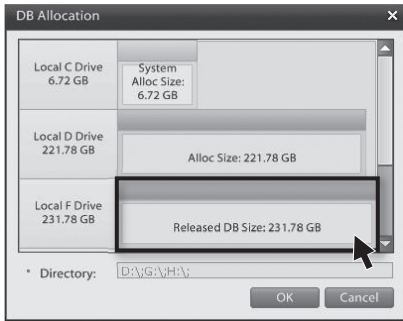
2. Click **OK** to disable the allocated drive.
The drive color will turn red.



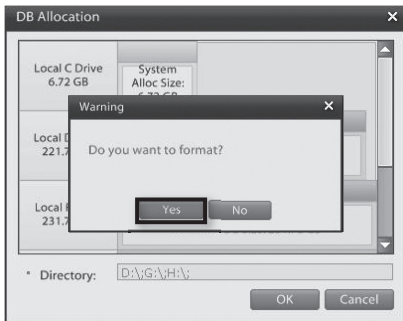
3. Right-clicking on the disabled database drive will place the database drive in free status. Free status drives may contain data, but this data will not be recognized as database data.

Reallocating a Disabled Drive

1. Left-click your mouse on a disabled database drive and you will be prompted with a "**Do you want to format?**" warning window.



2. Click **Yes** to initiate formatting or **No** to bypass formatting. The drive will then be reallocated as a database drive.



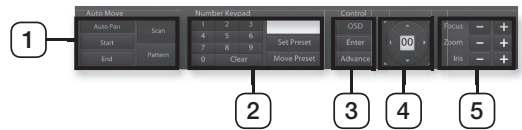
RESOURCE/PTZ/PLAYBACK/LOG

Resource Tab

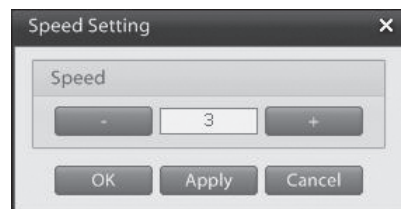


- 1 **Camera**
Displays the camera status. Drag and drop a camera icon to the live screen to view the video feed from that camera.
- 2 **Alarm in**
Displays the alarm-in status. A triggered channel will turn red.
- 3 **Alarm out**
Displays the alarm-out status. An activated alarm will turn red.

PTZ Tab



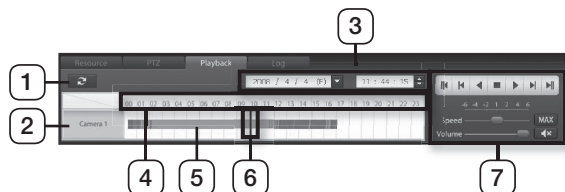
- 1 **Auto Move**
Automated PTZ movement functions.
Auto Pan: This button is used to initiate Auto Pan. AutoPan is a function where, after designating the start point and end point, the camera completes pan/tilt trips within the defined interval.
Start: Starting position for the Auto Pan.
End: Ending position for the Auto Pan.
Scan: Seeks out presets containing PTZ position data and moves to the position stored in memory.
Pattern: Memorizes observation trajectories initiated by the user and then automatically moves the camera in the same pattern and speed.
- 2 **Preset**
Enables the user to define Pan/Tilt positions and Zoom/Focus settings under Preset IDs that can be used on demand. The number of supported presets varies depending on the PTZ model. The system supports up to the number of presets supported by the PTZ itself.
Numeric Keypad: Use to enter Preset numbers.
Set Preset: Use to assign a PTZ camera position to a specified Preset ID.
Move Preset: Moves the PTZ camera to the position specified by a Preset ID.
- 3 **Control**
OSD: Accesses the PTZ camera's OSD menu.
Enter: Confirms selections in the PTZ camera's OSD menu.
Advanced: Accesses the PTZ camera's speed configuration window.



- 4 **Directional Pad**
Controls the vertical, horizontal, and diagonal movement of the PTZ camera. Also used to navigate in the PTZ camera's OSD menu.
- 5 **Focus/Zoom/Iris**
Controls the PTZ camera's **focus**, **zoom**, and **iris**.

Playback Tab

Click on the Playback tab to access recording timelines and recording playback controls for 1ch playback.

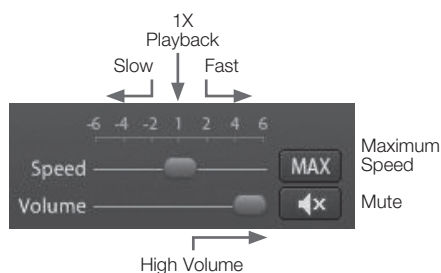


- 1 Refresh**
Refreshes the timeline to the latest recording data.
- 2 Camera**
Displays the selected video channel. Selecting the camera will display the corresponding time line data.
- 3 Date & Time Selection**
Select the desired year, month, and date to search.
- 4 Timeline**
Timeline features five levels of zoom. The zoom feature can be used view the time line in more detail. Left-click on the timeline to zoom-in. Right-click on the time line to zoom-out.
- 5 Recorded Data Time line**
Displays recording times and types in a colored time line.

Orange	Continuous Recording
Blue	Motion Recording
Grey	Object Detection Recording
Green	Alarm in Recording
Yellowish Green	PreAlarm Recording
Dark Blue	ATM/POS Recording
Yellow	Video Loss
Purple	Instant Recording

- 6 Timeline Bar**
Identifies the location of the desired timeframe you wish to search. Click the bar to the desired time.
- 7 Playback Controls**
Controls the direction and speed of the video playback.

	First recorded Data
	Single Frame Reverse
	Reverse Playback
	Forward Play
	Stop
	Single Frame Forward
	Last recorded Data



- Audio output is only available for 1x forward playback.


Log Tab

Clicking on the **Log** tab accesses event detection details, such as recording type (continuous, motion, object detection, PreAlarm, and POS) and network connection status.

Time	Type	Description
2008/03/21 16:54:49	Event	Camera 4) Camera 4 - Video loss
2008/03/21 16:54:49	System	Camera 4) Camera 4 - Continuous Recording
2008/03/21 16:54:29	Event	Camera 4) Camera 4 - Video loss
2008/03/21 16:54:29	System	Camera 4) Camera 4 - Continuous Recording

FULL SCREEN

Switching to Full Screen

1. Click on the  button to expand the live video to full screen.



2. You now have full screen view of the live video feeds.



3. Click on the left mouse button to end full screen display.

LIVE SCREEN SWITCH

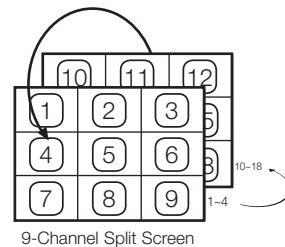
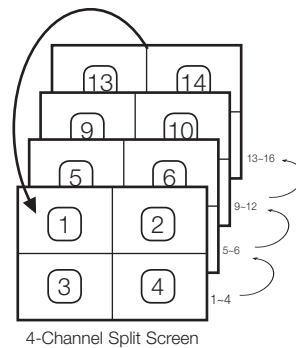
This feature enables you to flip through different camera feeds. If all camera feeds are not visible on a single screen, use this feature to flip through and view the remaining channels in sequence.

Sequencing Button

1. Select a single-screen or a 4-, 6-, 9-, 10-split screen, mode then click on the  button.



2. The system will cycle through video feeds while maintaining the selected display mode.



3. Click on the  button to stop the cycling.

1-CHANNEL VIDEO PLAYBACK

Instant 1-channel playback of the selected channel while monitoring others on live video feed.

1-Channel Playback

1. While monitoring, select a camera feed you wish to playback.



2. Click on the **Playback** tab.



3. Click on the camera **Camera 1** button.
4. The recording time line data of the selected channel will be displayed.



5. Select the playback time and click on the button to start playback.
6. Click on the button to exit the 1-channel playback.

CAMERA CHANNEL ASSIGNMENT

Assigning a Camera Channel

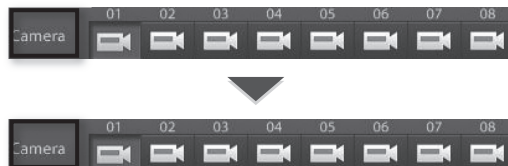
1. Click on a camera button using your mouse and drag to the live screen.



2. After dragging to live screen drop over the desired location on live screen to assign that channel.

Reset the video feed layout

The camera designations will turn from white to brown if reassigned video channels are preventing other channels from being displayed or if the video channel sequence is mixed up.



1. To reset the cameras to their default locations double-click on **Camera**.

Moving Camera Picture Via View Panel

1. Click on a video feed and drag to the desired location.




2. Release the mouse button over the desired location to complete the camera feed movement.



ON-SCREEN KEYBOARD

A virtual keyboard can be displayed on screen. This **On-Screen Keyboard** allows the user to directly enter text using the mouse when there is no keyboard attached to the DVR system or when using a keyboard is not a viable option.

Launching the On-Screen Keyboard

1. Click on the  button to launch the virtual keyboard.
2. Using your mouse, click on the characters of the virtual keyboard to make key entries.



3. To terminate On-Screen Keyboard, either click on File then select Exit or click the  button.

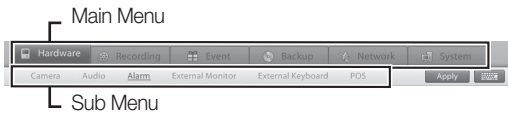


- The virtual keyboard supports only the English language option.

System Setup

SYSTEM SETUP - BASIC MENU

Setup menu category buttons



- Select from individual system setup categories.
- The main setup categories are **Hardware**, **Recording**, **Event**, **Backup**, **Network**, and **System**.


Saving Changes



- **Apply:** Applies any change that has been made in the system setup.

Virtual Keyboard



- Click on the  button to launch the virtual keyboard.
- With the virtual keyboard, key entries can be made using the mouse.



Camera/Alarm In/Alarm



- **Camera:** Use to select cameras you wish to configure.
- **Alarm In:** Use to select sensors (**Alarm In**) you wish to configure.
- **Alarm:** Use to select alarms (**Alarm Out**) you wish to configure.

HARDWARE

This category applies to the external devices that form your DVR system. External devices like cameras, audio devices, sensors, alarms, monitors, keyboards, and POS devices Setup. These options can be used to configure a security system to meet your operating environment.

Camera

Use this menu to enable/disable individual cameras and to configure the brightness, contrast, hue, and saturation levels of the video source. In addition, select whether to enable PTZ use and assign covert attributes to video feeds.



- 1 Video Display Window**
Displays the selected camera video feed. Changes to camera settings can be verified from this window.
- 2 Information**
Displays information about the selected camera channel.
- 3 Attribute**
Configure the camera name, mode, PTZ setting, and covert channel.
- 4 Picture Adjustment**
Use this feature to adjust the video signal's brightness, contrast, hue, and saturation levels. Clicking on the Default button will return all settings to default. Automatic Gain Control is a feature that automatically adjusts the brightness level for the camera.
 - The screen adjustment functions cannot be expected to improve the quality on a low quality video signal. Also make sure that the camera and monitor have been setup correctly before making video adjustments.
- 5 Linked Alarm In**
Select which sensor to link with the selected camera. When an event is detected, the selected sensor will initialize the camera to commence video recording.

Camera Attribute

Attribute	
Name	Camera 1
Camera	Use
PTZ	Use
Covert Channel	Not Use

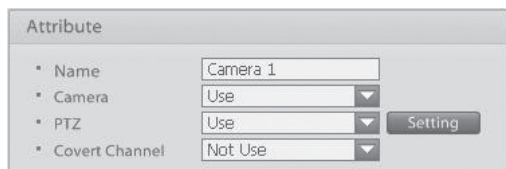
Setting

- **Name:** Enter a name (Suggestion: Camera location).
 - **Camera:** Enable or disable the selected camera.
 - **PTZ:** Enable or disable PTZ use for the selected camera.
 - **Setting:** Click the setting button to access PTZ protocol setup and communication configuration options.
 - **Covert Channel:** Enable or disable Covert Channel option for the selected camera. Covert Channel is a feature that hides the selected camera's video feed. This feature is particularly useful when you don't want selected users/people to view the camera feed, recording or location.
- When monitoring video feeds from a remote location, covert video feeds are viewable by authorized users.

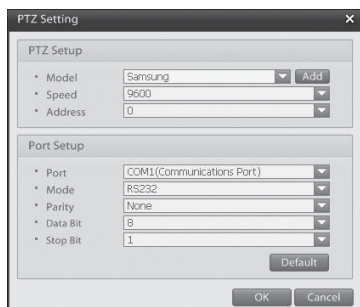
This DVR system allows you to remotely control PTZs, speed domes, and other external devices connected to the system. Before using this feature, however, you must install the external device to the RS485 port and configure the external device settings.

PTZ Setup

1. To select a camera for PTZ control set the PTZ option to **Use**.



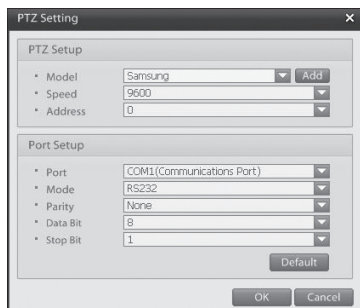
2. Click on the Setting button to access the following window:



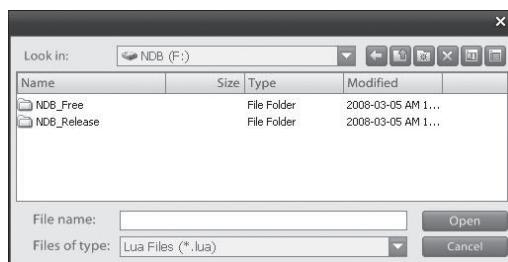
3. Define the model, baudrate, address, and communication method of the PTZ installed to the DVR.
4. Click on the **OK** button to finish configuring the PTZ.

Add to PTZ List

1. To add a new PTZ model, click on the **Add** button:



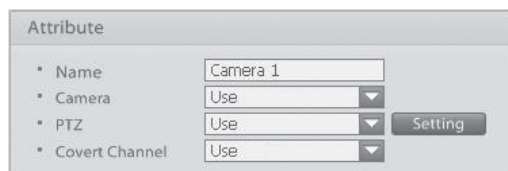
2. Select the PTZ model you wish to add.



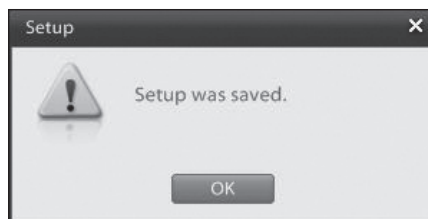
3. Click on the **Open** button to register the selected PTZ model.

Covert Channel Setup

1. Select the camera channel you wish to set as a Covert Channel.
2. Set Covert Channel option to **Use**.



3. Click on the **Apply** button and then, when the following window prompts, click on the **OK** button.



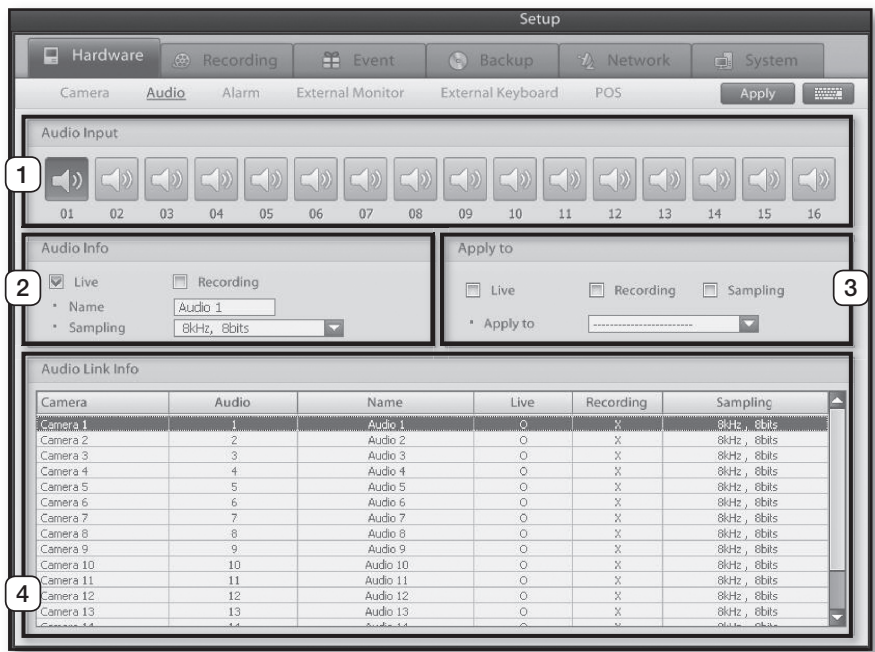
4. The covert channel sign will be shown instead of a video feed on the display screen.



- The video feeds will be shown when logged in as a user with secure channel permission.

Audio

Use this menu to enable/disable live audio output and audio recording.



- 1 Audio Input**
This menu allows you to associate individual audio input channels to each camera channel. Select a camera channel and then the audio input channel you wish to associate to the selected camera channel.
- 2 Audio Setup**
Live: Enables/disables live audio output on the live screen.
Recording: Enables/disables audio recording.
Name: Enter the name of the audio channel.
Sampling: Select the desired recording sampling rate.

- 3 Apply to**
Live: Select this option if you want to apply the current live option settings to all or selected camera channels.
Recording: Select this option if you want to apply the current recording option settings to all or selected camera channels.
Sampling: Select this option if you want to apply the current sampling settings to all or selected camera channels.
Apply to: Implements the setting changes for the selected options to all or selected camera channels.
- 4 Audio Link Info**
Displays the audio properties of each camera channel.

Alarm

This setup category covers sensor, camera, and alarm association settings. By associating a camera to a sensor, you can configure how long the camera is going to record for when a sensor event is detected. In addition, by associating an alarm output to a sensor, you can setup the alarm output to sound a warning signal when a sensor event is detected.



1 Setting

Channel: Select the sensor you wish to configure.

Name: Enter the name of the sensor.

Pre rec time: Select the time prior to a sensor event that the camera should record.

Post rec time: Select the time after to a sensor event that the camera should record.

Full Screen: Make the linked camera channels pop-up full screen on the display screen when a sensor event occurs.

Dwell Time: This option is used to define for how long subsequent sensor event signals are ignored after an initial event signal. Enabling this option instructs the system to ignore all other event signals transmitted by the sensor for the set amount of time following the initial event signal. So once an event signal is transmitted, the set discard time must lapse before another event signal can be recognized.

2 Linked PTZ

Camera: Select the PTZ camera channel you wish to associate to the sensor.

Preset: Select the PTZ preset for when the sensor event is detected.

Spot Full up: Select the camera channel to be displayed full screen on the spot monitor in a sensor alarm event.

Dwell Time: Set the time that the camera is displayed on the spot monitor.

3 Type

Select the input type of the sensor.

Click the button to switch between the NC and NO option.

: Normally open, but closes when an event is detected (Normally Open).

: Normally closed, but opens when an event is detected (Normally Close).

4 Alarm Out

Channel: Select an alarm (**Alarm Out**) to associate to the sensor (**Alarm In**).

Name: Enter the name of the alarm.

Dwell Time: Set how many seconds the alarm will be active on a sensor event.

Alarm Out Button: Select a sensor channel to associate to the alarm.

: Indicates an associated sensor.

: Indicates a non-associated sensor.

External Monitor

This menu directs video feeds to an external monitor via the spot port. Select the cameras to be display on the spot and configure their dwell time.



- 1

SPOT 1

Camera: Select camera feeds to be transmitted by spot port 1.

Dwell Time: Drag the slider left or right to set the delay interval between screen changes.

- 2

SPOT 2

Camera: Select camera feeds to be transmitted by spot port 2.

Dwell Time: Drag the slider left or right to set the delay interval between screen changes.

 - Channels configured as a Covert Channel cannot be displayed on the spot monitor.

External Keypad

Menu for setting up a keypad device to remotely control the DVR.

- 1 **DVR ID**
Enter the DVR's ID (1 through 255) so that the keypad device may identify the DVR.
- 2 **Keypad ID**
Enter the keypad's ID (1 through 4) so that the DVR may identify the keypad.
- 3 **Keypad Setup**
Keypad Name: Assign name to the keypad.
Use: Enable or disable keypad use.
Keypad Model: Select the model of the keypad device you wish to use.
Speed: Select a baudrate (2400Bps - 115200Bps) for communication between the keypad device and the DVR.
Address: Select the keypad device's address (0 through 32).
Port: Identify the number of the port through which the keypad device connects to the DVR.

Mode: Identify the interface method (RS232, RS422, or RS485) of the port through which the keypad device connects to the DVR.
Parity: Select the bit type (None, Odd, Even, Display, Blank) for detecting data transmission errors.
Data Bits: Select from 4, 5, 6, 7, and 8.
Stop Bits: Select from 1, 1.5, and 2.
Default: Reset all settings to default.



- When using a keypad device, please ensure that communication settings for both the DVR and the keypad device are the same. Communication setting mismatch can prevent the keypad device and the DVR from communicating.
- Refer to the keypad manufacturer's product manual for further information on the keypad device.

POS

MENU FOR LINKING THE DVR SYSTEM TO POS DEVICES AND LINKING THE VIDEO RECORDINGS WITH TRANSACTION RECORDS GENERATED AT POINTS OF SALE.

The screenshot shows the 'Setup' window with the 'POS' tab selected. The 'Available POS Device' table contains one entry: 'Mart' on 'COM 2' linked to 'Cam 1'. The 'POS Setting' section shows 'Mart' as the name, 'POS 1' as the POS ID, 'Camera 1' as the linked camera, and 'VSL-Pro' as the POS format. The 'Port Setup' section shows 'COM2 (Communications Port)' as the port, 'RS232' as the mode, '9600' as the speed, 'None' as the parity, '8' as the data bit, and '1' as the stop bit. The 'OSD' section has 'Display OSD' checked, 'Display Time' set to '3 Sec', and 'Display Cam' set to '01'. The 'Transaction Wait' section has 'Wait Time' set to '5 Min'. The 'Select HDD for POS Database' section has 'F Drive (Free : 231.78 GB)' selected as the POS Database.

1 List

Displays the currently configured POS device, with entry add and, update, delete options.

Add: Use to add a POS device to the list.

Update: Use to update the information of a registered POS device.

Del: Use to delete a POS devices information from the list.

2 POS Settings

Name: Enter an appropriate name for the POS Device.

POS ID: Select the ID of the POS device connected to the DVR (1 through 16).

Linked Camera: Select the camera channel with the video feed you wish to store along with POS data received from the POS device.

POS Format: Select the type of POS device or the text inserter.

3 Port Setup

Configure the settings to allow communication between POS device and DVR.

Port: Select which DVR port the POS device is connected.

Mode: Select which interfacing type that the POS is using.

Speed: Select a baudrate (2400Bps - 115200Bps) for communication between the POS device and the DVR.

Parity: Select the bit type (None, Odd, or Even) for detecting data transmission errors.

Data Bits: Select from 4, 5, 6, 7, and 8.

Stop Bits: Select from 1, 1.5, and 2.

4 OSD

Display OSD: Enable or disable live screen display of product information transmitted

through the POS device.

Display Time: Designate how many seconds you wish OSD data to be displayed on the DVR's live screen after product barcode gets scanned. If new product information is received, the information on the DVR screen will update itself.

Display Cam: Select the camera channel on which to display the information received from the POS device.

5 Transaction Wait

Wait Time: Configure how many minutes to wait until the next product information can be entered when the barcode reader temporarily stops working while scanning a product. While in standby mode, information of the previous product will be automatically deleted if no new product information is entered or the barcode scan termination button is not pressed.

6 Select HDD for POS Database

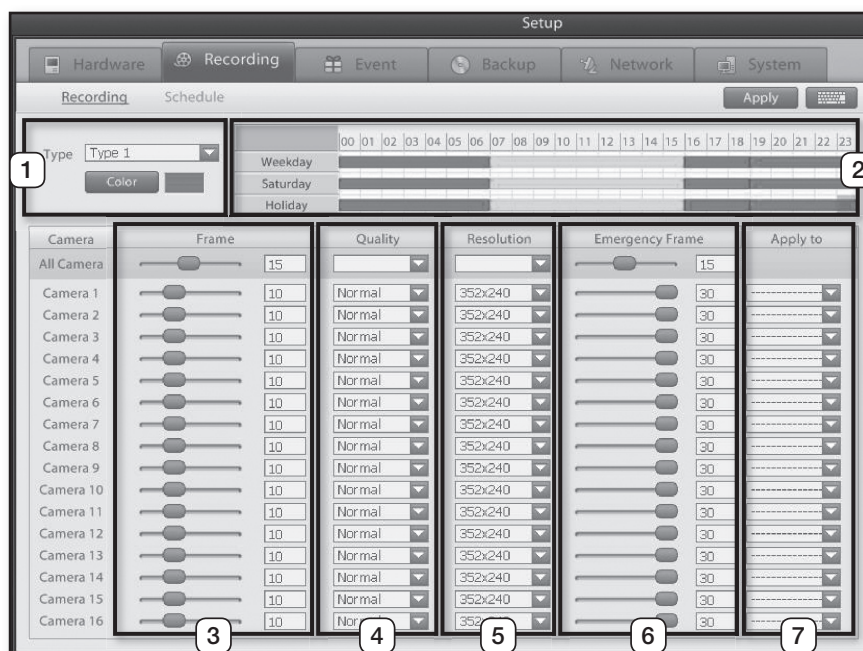
Select on the system which HDD will be used to store the POS data.

POS Database: The **POS database** must be kept separate from the DVR system drives. Do not use the operating system or recording database HDD to store the POS data.

RECORDING

Recording

USE THIS MENU TO ASSIGN DIFFERENT RECORDING SCHEDULES FOR INDIVIDUAL CAMERAS DURING WEEKDAY, SATURDAY, AND HOLIDAY CATEGORIES.



1 Type

You can register and manage up to five different recording profiles (**Options include: Recording times, Picture quality, Resolution, Emergency recording time, etc.**). In addition, you can assign different colors to each schedule type for easier identification.

2 Timeline

Assign the recording type for each timeframe under **weekday**, **Saturday**, and **holiday** categories. To configure the range of the recording method, select and drag the desired time using your mouse.

3 Frame

Set the recording fps for each camera.

4 Quality

Set the recording quality for each camera.

5 Resolution

Set the recording resolution size.

6 Emergency Recording

Set the fps (recording frame rate) for when an emergency event occurs. (To setup the emergency definition refer to P.34 - Emergency.)

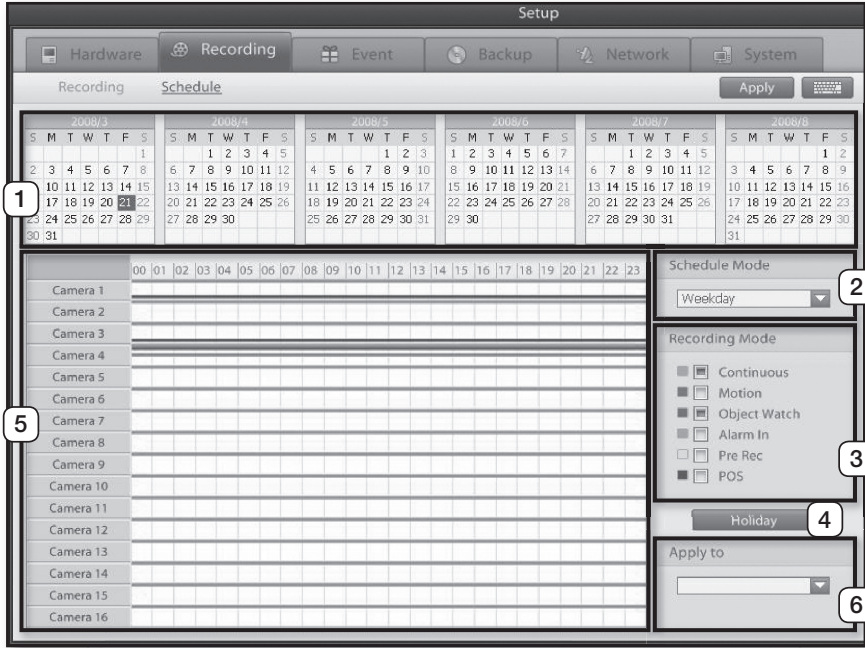
7 Apply to

The selected channel setting value can be applied to all or selected channel.

Schedule

Your DVR gives you flexibility over recording schedules by allowing you to define and schedule of each individual camera's recording modes for **weekday**, **Saturday**, and **holiday** timeframes.

This menu displays the recording schedule for the next six months from the current month in calendar format.



1 Calendar

The calendar consists of six months. Click on a date to view the camera recording modes set for that date.

2 Schedule Mode

This feature is used to apply a recording schedule by weekdays, Saturdays, or holidays.

Weekday: Displays the recording schedule for all weekdays.

Saturday: Displays the recording schedule for all Saturdays.

Holiday: Displays the recording schedule for all holidays.

3 Recording Mode

Displays different types of recording modes. To apply a recording mode to the recording schedule, simply select the recording mode then drag and drop on the timeline.

Continuous: A recording mode that will continuous record regardless of event occurrence.

Motion: A recording mode that initiates recording when motion is detected within the camera's field of vision.

Object Watch: A recording mode that initiates recording when an object either appears or disappears from the camera's field of vision.

Alarm In: A recording mode that initiates recording on a sensor event. (Alarm In).

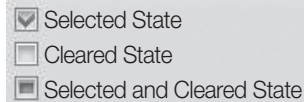
Pre Rec: A recording mode that records for a configured amount of time leading up to an event (sensor or motion). This feature is used to determine the events leading up to a sensor or motion event.

POS: A recording mode that initiates recording by POS when a transaction takes place.



Recording mode button states

- When dragging the timeline with the mouse, there are three types of recording mode button states.



- Selected State:** 1 When the concerned recording mode is enabled.
- Cleared State:** 2 When the concerned recording mode is disabled.
- Selected and Cleared State:** 1 When two different recording modes have been enabled. 2 Restore to previous setting.

4 Holidays

Use to access a the calendar and configure user-defined days as holidays.

5 Timeline

Displays the recording mode for each camera on the selected date. To apply a different recording mode to a the recording schedule, simply drag the timeline with your mouse and select the recording mode.

6 Apply to

Highlight a single channel recording time line then it can be applied to all or selected channels.

Holiday Setup

Click on the **Holiday** button to define holidays.

The screenshot shows the 'Holiday Setup' dialog box. It has a title bar with a close button. Inside, there are two main sections: 'Holiday' and 'List'. The 'Holiday' section contains a calendar for the year 2008, with the month 03 selected. A date is highlighted, and a callout '1' points to it. Below the calendar is a 'Cycle' section with radio buttons for 'No Cycle', 'Every' (with fields for day, week, month, and year), and 'Every'. A callout '2' points to the 'Cycle' section. To the right of the 'List' section is a table with columns 'Date' and 'Cycle'. A callout '3' points to this table. Below the 'List' section is a 'Range' section with a 'Start' date field (2008 / 3 / 5 (W)) and radio buttons for 'Unlimited', 'Count' (with a 'Times' field), and 'End' (with an 'End' date field). A callout '4' points to the 'Range' section. At the bottom of the dialog are buttons for 'Add', 'Update', 'Del', 'OK', and 'Cancel'. Callouts '5', '6', and '7' point to the 'Add', 'Update', and 'Del' buttons respectively.

1 Calendar

Select a date to define as a holiday.

2 Cycle

Configure a repetition schedule for the holiday.

No Cycle: Set no cycle on the selected date.

Every day: Repeat from the selected date for the entered number of days.

Every Week: Repeat from the selected date for the entered number of weeks.

Every Month: Repeat from the selected date for the entered number of months.

Every Year: Repeat from the selected date for the entered number of years.

3 List

Displays a list of dates designated as a holiday.

4 Range

Use to define a range for a holiday.

Start: Select the date for the holiday.

Unlimited: Select if you do not wish to designate an unlimited range.

Count Times: Designates the number of times the holiday will occur.

End: Designates all days between the start and end date as holidays.

5 Add

Adds a holiday to the current configuration.

6 Update

Updates the settings of an entry selected from the list.

7 Del

Removes the selected entry from the holiday list.

EVENT

Motion Detection

These settings are used to commence recording when motion is detected within a user-defined zone. You can optimize the recording environment by associating PTZ devices, alarms, and cameras to motion detection events.



1 Video Display Window

This window is used to define the motion detection zone for the selected video feed. Select the desired motion detection zone by dragging your mouse over the screen.

Set Motion Detection Zone:

Left-click on or drag over the desired motion detection zone with your mouse. The motion selected areas are highlighted by a green color.

Deactivate Motion Detection Zone:

Right-click on or drag over the motion detection zone you wish to deactivate.

2 Zone setting

Block Count: Use to designate the number of blocks in the motion detection zone grid.

Sensitivity: Use to select the sensitivity of motion detection.

Set All Area: Selects the whole screen for motion detection.

Erase All Area: Clears the screen of any motion blocks.

3 Rec time

Pre rec time: Use to configure how long to record for leading up to a motion detection event.

Post rec time: Use to configure how long to record for following a motion detection event.

4 Action Setting

Full Screen: Enable or disable full screen display of video feed when a motion event occurs.

Beep: Enable or disable the buzzer for events.

5 Linked PTZ:

Camera: Use to associate a PTZ to the motion detection camera channel. When a motion detection event takes place, this feature moves the selected PTZ to a preset position.

Preset: Use to select the desired PTZ preset.

6 Spot Full Up

Enable or disable full screen spot monitor pop up of the video feed when a motion event occurs.

Dwell Time: Use to configure the duration for displaying the camera on the spot port.

7 Linked Camera

Link other cameras to record when the selected camera detects motion. Multiple cameras can be selected to be linked via motion.

8 Apply to

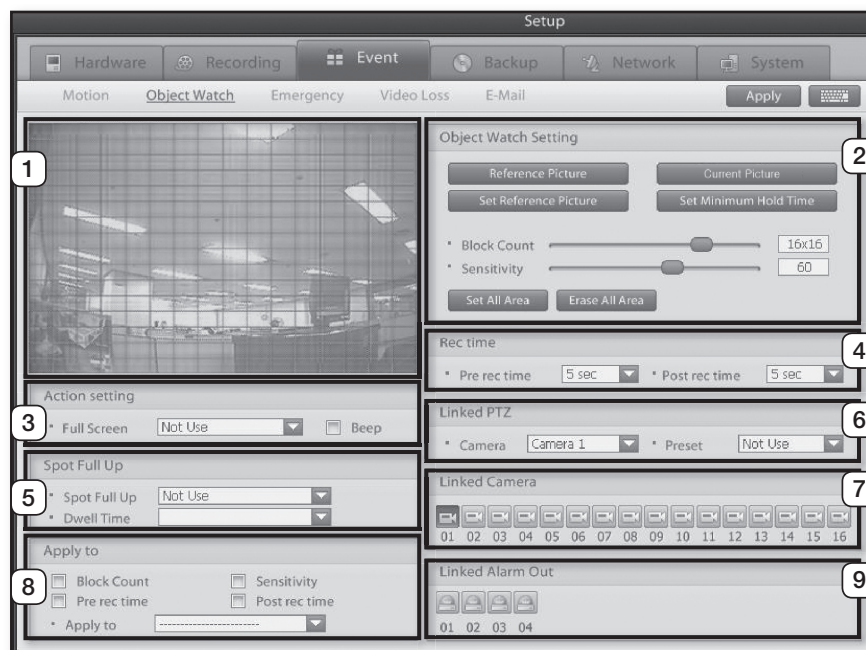
The selected channel setting value can be applied to all or selected channels.

9 Linked Alarm Out

Link Alarm Outs to trigger on motion detection in camera, multiple alarms can be linked via motion.

Object Watch

Object Watch is a feature that monitors changes in objects by comparing the current video feed segment with a previous video feed segment. When a change is detected within a set monitoring duration this triggers as an event and the DVR will commence recording. This feature can be configured so that an event triggers recording on associated cameras, alarm outputs, spot monitor output, etc.



1 Video Display Window

This window is used to define the object watch zone for the selected video feed.

Set Object Watch Zone:

Left-click on or drag over the desired detection zone with your mouse.

Deactivate Object Watch Zone:

Right-click on or drag over the detection zone you wish to deactivate

2 Object Detection Settings

Reference Picture: Displays the reference picture.

Current Picture: Displays the current picture.

Set Reference Picture:

Designates the current video as the reference picture.

Set Minimum Hold Time:

Used to define the minimum monitoring duration. An object watch event is generated only if an object change lasts for longer than the minimum monitoring duration.

Block Count: Use to designated the number of blocks for object detection.

Sensitivity: Use to select the sensitivity of object detection.

Set All Area: Selects the whole screen for object detection.

Erase All Area: Clears the screen of any object detection blocks.

3 Action Settings

Full Screen: Enable or disable full screen display of video feed upon an object watch event.

Beep: Enable or disable the buzzer for events.

4 Rec Time

Pre rec time: Use to configure how long to record for leading up to a detection event.

Post rec time: Use to configure how long to record for following a detection event.

5 Spot Full Up

Enable or disable full screen spot monitor pop up of the video feed when a object event occurs.

Dwell Time: Use to configure the duration for displaying the camera on the spot port.

6 Linked PTZ

Camera: Use to associate a PTZ to a object watch event. When an event takes place, this feature moves the selected PTZ to a preset position.

Preset: Use to select the desired PTZ preset.

7 Linked Camera

Link other cameras to record when the selected camera detects an object event. Multiple cameras can be linked via object watch.

8 Apply to

The selected channel setting value can be applied to all or selected channels.

9 Linked Alarm Out

Link Alarm Outs to trigger on object detection multiple alarms can be linked via object.

Emergency

Use this menu to configure settings for Emergency. Use this menu to define an emergency in the DVR, emergency can be used to increase fps, stream video or send E-mail to a remote client.



- 1 Motion**
Select which camera channels to set as emergency for when a motion event occurs.
- 2 Video Loss**
Select which camera channels to set as emergency for when a video loss event occurs.

- 3 Alarm In**
Select which alarm in channels to set as emergency for when a alarm in event occurs.

Video Loss

Use this menu to configure settings for a video loss event. Video loss events can be used to record selected cameras, move a PTZ camera or trigger an Alarm output.



- 1 Camera**
Displays the selected camera channel's designation.
- 2 Use Beep**
Use to enable or disable the buzzer upon video loss detection.
- 3 Linked Camera**
Select the cameras you wish to associate to the video loss camera. Video loss detection from the selected camera initiates recording in all the cameras associated to that camera, regardless of their normal recording schedule.

- 4 Linked PTZ**
Camera: Select the PTZ you wish to associate to the video loss camera. Video loss detection directs the selected PTZ to the preset position.
Preset: Select the desired PTZ preset channel.
- 5 Linked Alarm Out**
Settings for triggering alarms in the event of a video loss. Select the desired alarms to associate to the video loss camera.

E-Mail

This feature sends out an e-mail to the administrator when an emergency or system event occurs to facilitate a fast response.

The screenshot shows the 'Setup' window with the 'Event' tab selected. The 'E-Mail' sub-tab is active. The interface includes a left sidebar for 'E-Mail Address Manage' with a table and 'Add', 'Update', and 'Del' buttons. The main area contains fields for 'Name', 'E-Mail Setup' (Receiver, CC, Subject), 'E-Mail Server Setup' (Sender Name, E-Mail Address, Server(SMTP), and Server Authentication), and 'Condition Setting' (Emergency/Event radio buttons and checkboxes for Motion, Video Loss, and Alarm In across 16 channels). A list of existing email groups is shown in the bottom left.

1 E-Mail Address Manage

A feature that enables you to organize and manage email addresses into groups. Clicking on the **Mail Group/User Manage** button prompts the E-mail Address Management window.

2 Name

Enter the name of the mailing list you wish to add.

3 E-Mail Setup

Receiver: Enter the recipient's e-mail addresses.

CC: Enter the email address of Cc recipients.

Subject: Enter the subject of the e-mail.

4 E-Mail Server Setup

Enter the sender's email address and mail server details.

Sender Name: Enter the name of the sender.

Mail Address: Enter the sender's e-mail address.

Server(SMTP): Enter the address of the mail sending server.

Server Authorization: Used when security password authentication is required to access the e-mail account.

ID: Enter the email account ID for the mail **server** (SMTP).

Password: Enter the e-mail account's password.

5 Condition Setting

Select from Emergency Message and Event.

Emergency: Select to use the default emergency setting to send the E-mail

Event: Select to custom configure motion detection, video loss, and sensor channels for sending e-mail.

Motion: Select the channels you wish to send out an e-mail notification for when a motion detection event takes place.

Video Loss: Select the channels you wish to send out an e-mail notification for when a video loss is detected.

Alarm In: Select the channels you wish to send out an e-mail notification for when a sensor (Alarm In) event takes place.

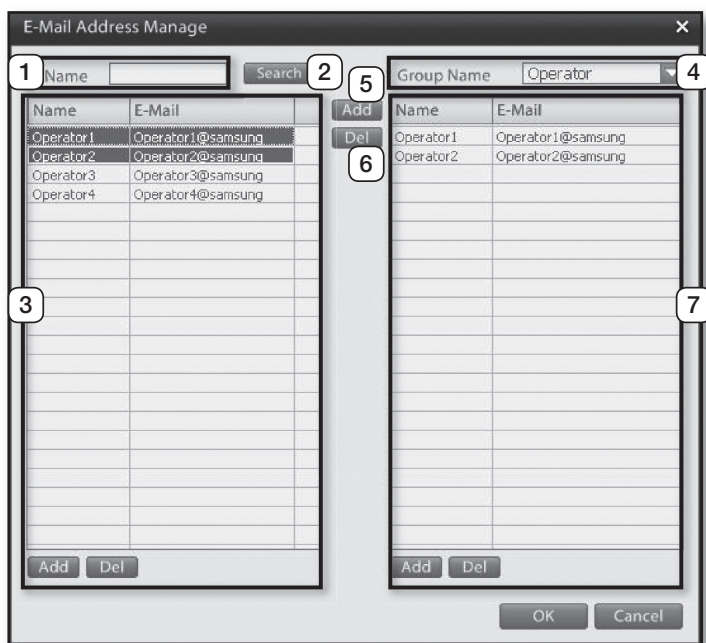
6 Mail List

Add: Add a mailing list.

Update: Edit an existing mail list.

Del: Remove a mailing list.

E-Mail Address Manage



- 1 Name**
Enter the name you wish to search.
- 2 Search**
Click on the **Search** button to commence search.
- 3 User List**
Displays user names registered in the mail list and their respective e-mail addresses.
Add: Click on the **Add** button to add a new user name and email address.
Del: Click on the Remove button to delete selected contacts from the list.
- 4 Group Name**
Use the drop down menu to select a group. Selecting a group will populate the names and email addresses of users assigned to that group.

- 5 Add**
Click to add the selected contacts from the user list to the group.
- 6 Del**
Click to remove selected contacts from the group list.
- 7 Group List**
Displays a list of user names and email addresses assigned to the selected group.
Add: Click on the Add button to create a new group.
Del: Click to delete the selected group.

BACKUP

Schedule

Use this menu to make a backup of recorded video data to the designated backup media based on a defined schedule. Select the backup timeframe, backup intervals, and backup media to configure a comprehensive backup schedule.

The screenshot shows the 'Setup' window with the 'Backup' tab selected. The 'Schedule' sub-tab is active. On the left, a 'List' table contains one entry: 'Backup' with start time '12:07:06' and range '13:07:06~14:08:06'. Below the table are 'Add', 'Update', and 'Del' buttons. On the right, the configuration fields are: 'Backup Title' (empty), 'Time Setting' (Daily selected, Start Time 10:32:02, Time Range 10:32:02 ~ 10:33:02), 'Destination' (Server: LocalServer, Media: None, Device: empty, Path: empty), 'Option' (Continuous, Alarm, Pre Rec, Motion/Object Watch, Event, Audio all checked), and 'Camera' (a row of 16 camera icons, with icons 01 through 16 labeled below).

- 1 List**
Add: Click on this button to add a backup profile to the list.
Edit: Click on this button to edit a backup profile.
Del: Click on this button to remove a backup profile.
- 2 Backup Title**
Enter the name of a backup profile you wish to add to the backup list.
- 3 Time Setting**
Daily: Select if you wish to backup the defined recording timeframe at the designated time on a daily basis.
Weekly: Select if you wish to backup the defined recording timeframe at the designated time on a weekly basis.
- 4 Destination**
Server: Select the server you wish to backup to.
Media: Select the desired backup media.
Device: Shows the device path and type of media.
Path: Select the desired backup folder path.


- 5 Item**
Settings for defining recording data segment you wish to backup.
Continuous: Select to backup continuous recording segments of recorded data.
Motion/Object Watch: Select to backup motion detection recording segments of recorded data.
Alarm: Select to backup sensor detection recording segments of recorded data.
Event: Select to backup instant recording and video loss recording segments of recorded data.
Pre Rec: Select to backup PreAlarm recording segments of recorded data.
Audio: Select to backup audio segments of recorded data.
- 6 Camera**
Select the cameras you wish to backup.

NETWORK

Network

You can configure the network components to enable remote control management and video/audio streaming features on your DVR.

- 1 IP Auto Allocation (DHCP)**
This option is to allow the DHCP server to automatically allocate a dynamic IP address for your DVR or to configure a manual IP designation. If set to manual, you will need to manually enter the IP address, subnet mask, and gateway address.
- 2 Auto DNS Server Setting**
Enter the DNS server's details to the primary DNS server and alternate DNS server fields.
- 3 Remote Connection**
Bandwidth: Designate the maximum rate of video data streaming over the network.
Acceptable Count: Designate the number of clients you wish to allow remote connection.
Web DVR Support: Enable or disable access to the DVR for Web DVR connection.
Viewer Support: Enable or disable Viewer connection.
Port Number: Enter the number of the network port for main viewer connection. Click on the Port Check button to find out the access permission of the entered network port.

-  • Contact your network administrator or internet service provider if you are not familiar with your network environment or do not know the IP address.
- Remote connection and monitoring by a large number of users can result in a heavy load for your system and even disrupt basic system functionalities. This menu is designed for situations requiring restriction on the number of user connections and will reject additional DVR server connections beyond the designated number.
- Your DVR utilizes six ports to provide network services. If making changes to the ports, you must be careful to assign redundant port numbers. The following table shows the network ports used by the DVR unit:

Network Port	Port Number
WebDVR Port	80
Video Transmission and DVR Control Port	12000
Software Upgrade Port	12004
Emergency Video Transmission Port	12005
Two-Way Audio Transmission Port	12006
Two-Way Audio Reception Port	12007

- Forwarding of these ports is required for connecting the DVR through an IP router. For more information on port forwarding, please refer to the IP router's user manual or contact the router's manufacturer.

DDNS

This menu can be used to enable the DDNS (Dynamic Domain Name System) on the DVR system. DDNS is used so that, you can connect your DVR system to DHCP server and have a fixed address.

1 Account

ID: Enter the ID of your DDNS server account.
Password: Enter the password for your DDNS server account.

2 Network

Server Address: Enter the address of the DDNS server.
Server Port: Enter the port number of the DDNS server.
Client Port: Enter the port number of DDNS's client.
Update Time: Enter the interval time for updating the DVR data to the DDNS.

3 Options

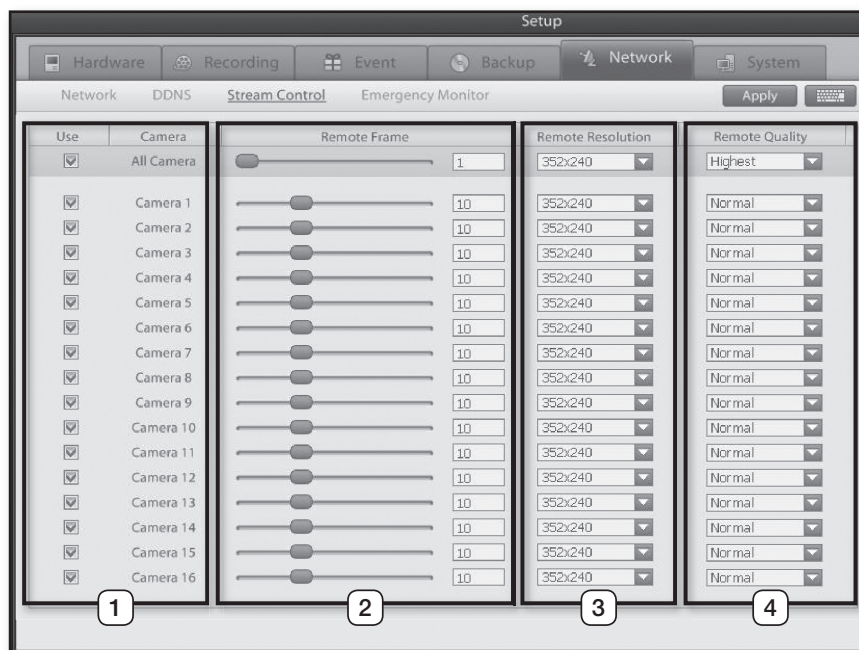
Use Samsung DDNS: Select if you wish to use the DDNS server administrated by Samsung Electronics.
Use External DDNS: Select if you wish to use a DDNS server other than the one offered by Samsung Electronics.



- If Samsung DDNS (websamsung.net) is selected, a DDNS address will be automatically allocated using the physical address of the ethernet card attached to the main unit. With an Ethernet card whose MAC address is 00-0c-8c-ab-cd-ef, for example, the domain gets automatically assigned as aabcdef.websamsung.net. Here, abcdef designates the last six digits of the card's MAC address and the "a" denotes the DVR (mode: SPR-9x16) identification code.
- When configuring an external DDNS (dyndns.com, no-ip.com, changeip.com), it takes approximately 30 to 60 seconds to update the URL IP to the DNS.
- If you are accessing a network directly via an IP router, you must designate the DDNS network port under the IP router's setup menu.
- If you are receiving dynamic IP allocation for your DVR unit using your IP router's DHCP feature, you must designate a port for the received IP under the IP router's setup menu. For applications using an IP router, Samsung Electronics recommends that instead of using the DHCP feature you first designate the allocated IP and port number under the router's setup menu, set the main unit's connection mode as fixed IP, and then directly enter the designated IP on the IP router. Please refer to your IP router's user manual or contact the router manufacturer for instructions on router configuration.

Stream Control

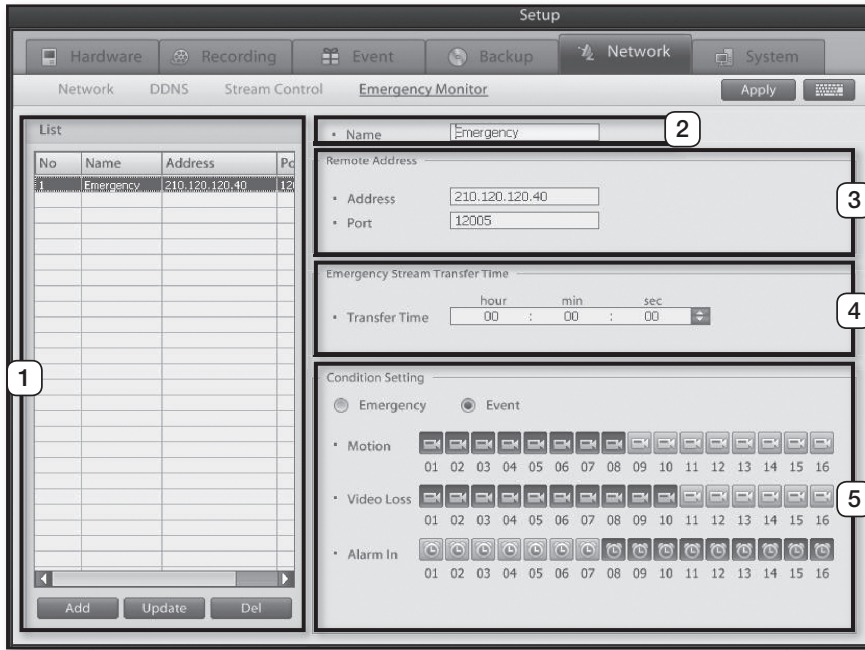
Define frame rate, resolution, and picture quality settings of individual camera channels you wish to stream over the network.



- 1 Use**
Enable/Disable the cameras you wish to stream over the network.
 - 2 Remote Frame**
Adjust the network streaming frame rates for individual cameras.
 - 3 Remote Resolution**
Adjust the streaming resolution setting for individual cameras.
 - 4 Remote Quality**
Adjust the streaming picture quality for individual cameras.

Emergency Monitor

Use this menu to setup video transfer to the emergency monitor on a remote PC in emergency situations or when an event is detected. In order to utilize this feature, you must configure the address of the remote PC, the port number, streaming duration, and notification item.



1 List

Add: Click to add a new emergency monitor setup to the list.

Edit: Click to edit and update a emergency monitor setup.

Del: Click to remove the selected emergency monitor connection info.

2 Name

Enter the name of the emergency monitor setup you wish to add to the list.

3 Remote Address

Address: Enter the IP address of the emergency monitor-installed remote PC.

Port: Enter the emergency monitor's port number. (Standard: 12005)

4 Emergency Stream Transfer Time

Configure how long you wish to stream the video feed in the event or an emergency of event detection.

5 Condition Setting

Select which notifications will transmit video feed to the remote PC's emergency monitor.

Emergency: Select to use the DVR preset emergency setup configuration.

Event: Select to custom configure motion detection, video loss, and sensor channels.

Motion: Select the channels you wish to stream video feeds to the remote PC's emergency monitor when a motion detection event takes place.

Video Loss: Select the channels you wish to stream video feeds to the remote PC's emergency monitor when video loss is detected.

Alarm In: Select the channels you wish to stream video feeds to the remote PC's emergency monitor when a sensor (**Alarm In**) detection event takes place.

User

Use this menu to manage user accounts and groups. By assigning and restricting system access for user and group accounts, you will be able to implement systematic management of your DVR system in a multi-user environment.



- 1 Group List**
Displays a list of registered groups.
Add: Click to add a new group.
Remove: Click to remove the selected group.
- 2 User List**
Displays a list of registered users.
Add: Click to add a new user.
Remove: Click to remove the selected user.
- 3 Account**
Displays details of the DVR access-authorized users and groups.
Name: Displays the user account identification.
Password: Displays the account's password using asterisks.
E-mail: Displays the email address registered to the user account.
Group: Displays the group the user account belongs to.
Phone: Displays the telephone number registered to the user account.
Description: A description on the user account or group.
- 4 Server**
Gives authority to stop DVR server operation and to allocate hard drives for image data storage.
Stop: Gives authority to terminate DVR server operation.
DB Alloc: Gives authority to allocate the hard drives on the DVR for image data storage.

- 5 Watch**
Permission for, 1-channel search, PTZ control, covert channel monitoring, and instant recording authorities from the monitoring screen.
Login: Gives authority to log into the watch screen.
Instant Playback: Gives authority to perform 1-channel search from the monitoring screen.
PTZ Control: Gives authority to perform PTZ control.
Covert Channel Search: Gives authority to monitor video feeds configured as covert channels.
Instant Recording: Gives authority to commence instant recording of selected cameras in emergencies by clicking on the I-REC button.
- 6 Search**
Permission for, backup, and hidden channel authorities from the search screen.
Login: Gives search authority.
Backup: Gives authority to backup video recordings to the storage device.
Covert Channel Search: Gives authority to view Covert Channels during search.
- 7 Setup**
Gives authority to change DVR system operation settings.
Login: Gives authority to enter the setup menu.

- Camera:** Gives authority over camera configurations.
- Alarm:** Gives authority over sensor and alarm configurations.
- External Monitor:** Gives authority for external monitor video feed configurations.
- Recording:** Gives authority over recording configurations.
- Schedule:** Gives authority over recording schedule configurations.
- Motion:** Gives authority over motion recording configurations.
- Emergency:** Gives authority over emergency situation configurations.
- Video Loss:** Gives authority over video loss notifications.
- E-Mail:** Gives authority over event notification email configurations.
- Backup:** Gives authority over backup configurations.
- Network:** Gives authority over network configurations.
- DDNS:** Gives authority over DDNS configurations.
- Stream Control:** Gives authority over streaming options.
- Setting:** Gives watermark, video standard, recording method, system reboot, and language configuration authorities.
- Date/Time:** Gives authority over system date and time configurations.
- Information:** Gives authority to view information on system operating system and hardware, DVR program, etc.
- Audio:** Gives authority over audio configurations.
- Emergency Monitor:** Gives authority over emergency remote notification settings.
- POS:** Gives authority over POS configurations.
- Object Watch:** Gives authority over object detection configurations.
- External Keyboard:** Gives authority over external keyboard configurations.

- 8

Camera

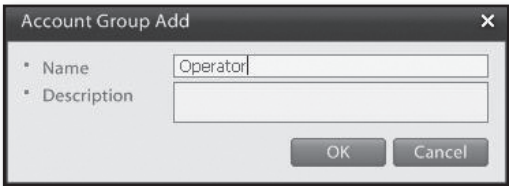
Assign monitoring and search camera channels for the user or group.
- Admin account has all DVR access rights. The admin account can create, void, and access other user accounts.
 - Non-admin accounts cannot modify their own access clearance. This can only be done through the admin account.

Adding a Group

- To add a new user group, click on the **Add** button from the following window:



- Enter the **name** and **description** for the new group.

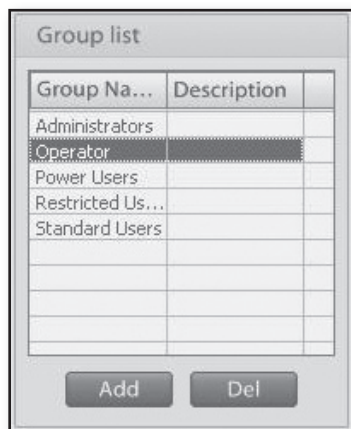


- Click on the **OK** button to finish.



Deleting a Group

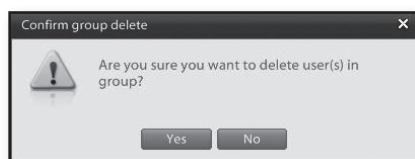
1. Select the group you wish to delete.



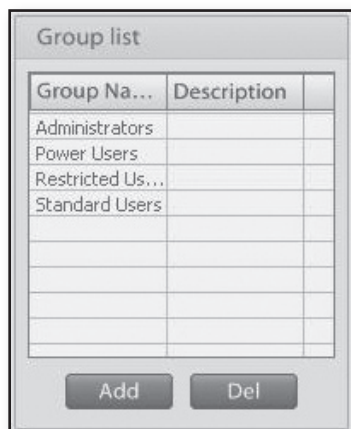
2. Click on the **Delete** button.
3. A window will prompt "**Are you sure you want to delete the group?**" as shown below. Click on the **Yes** button to continue with deletion.



4. The following message will prompt if there are user accounts assigned to the group you chose to delete. Clicking on the **Yes** button will delete all users in the group. Clicking on the **No** button will delete the group only.

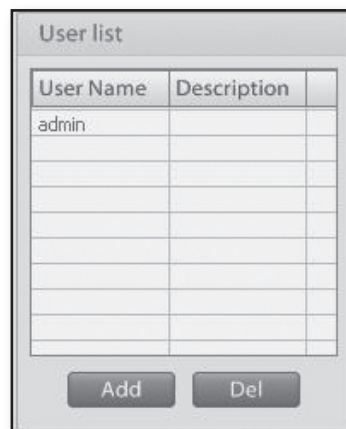


5. You can then verify the deletion.

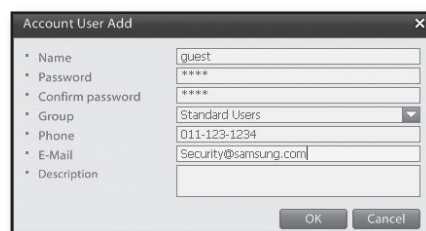


Adding a User Account

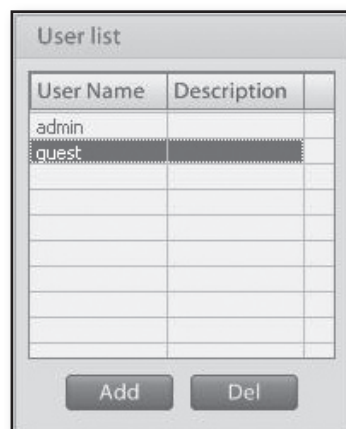
1. To add a new user account, click on the **Add** button from the following window:



2. Enter the name, password, group association, and other information about the user account you wish to include.

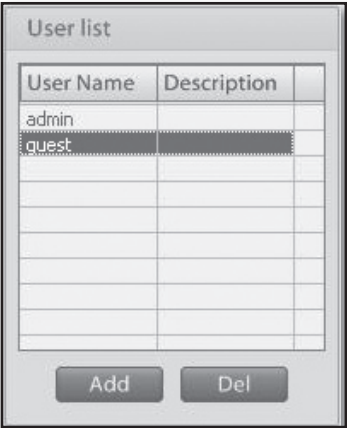


3. Click on the **OK** button to finish adding a new user account.



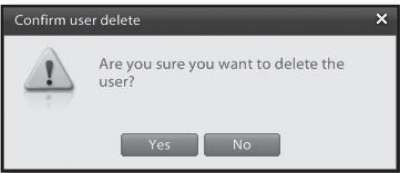
Deleting a User Account

1. Select the account you wish to delete.

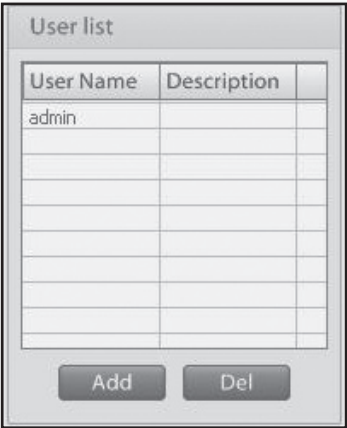


2. Click on the **Delete** button.

3. A window will prompt “**Are you sure you want to delete the user?**” as shown below. Click on the **Yes** button to continue with deletion.

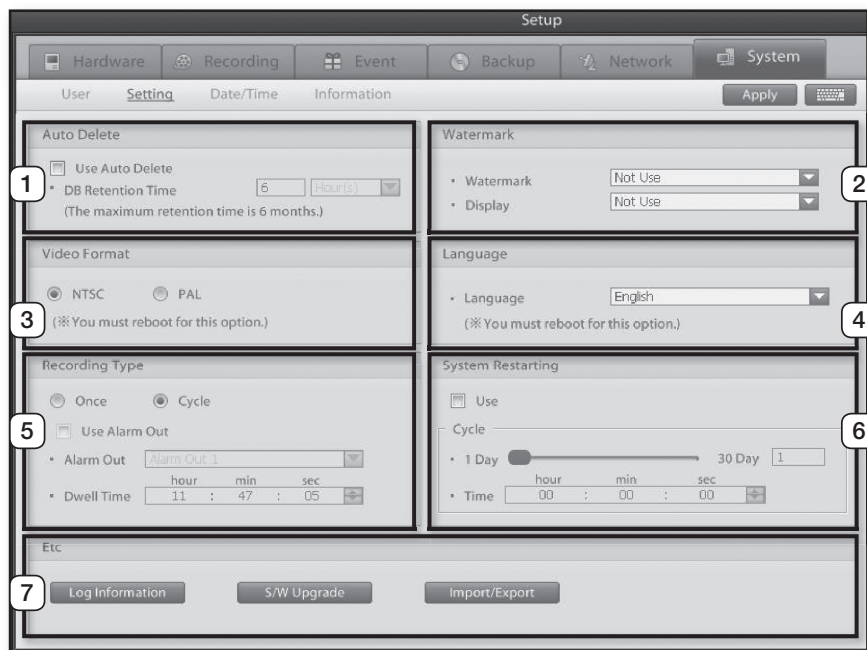


4. Verify that the user account has been removed from the list.



Setting

Use this menu to setup and view the General settings on the DVR. The settings include Audio delete, Watermark, Video format, Language, Recording type, System restart, System Log, S/W upgrade and a Import and Export function.



1 Auto Delete

This feature automatically deletes recording database data after the designated amount of time lapses.

Use Auto Delete: Check to enable automatic database deletion.

DB Retention Time: Designate how long you wish the database data to be maintained. Database deletion term can be configured in units of hours, days, weeks, or months

2 Watermark

This feature embeds watermark encryption into the recorded video data.

Watermark: Enable or disable embedding of watermark on video recordings.

Display: Enable or disable watermark certification display on video recording playback.



- Watermark embeds a watermark that is invisible to the naked eye but recognizable by Samsung Electronics. If someone were to forge or alter the video recordings, you can use the watermark to authenticate the data.

3 Video Format

Select the video format of the cameras. You can choose between NTSC and PAL. Once you've selected a format method, the system will restart.

4 Language

Your DVR system supports multiple languages. From this menu, you can configure the system to a desired language.

5 Recording Type

Once recording and **Cycle** (overwrite) recording are the available recording options.

Choosing single recording will suspend all additional recording once the hard drive space has been completely filled up. Setting to repeated recording, on the other hand, will overwrite starting from the oldest data once the hard drive space has been completely filled up.

6 System Restart

This feature automatically restarts the system at designated times to ensure greater system stability. Restarting the DVR can minimize system errors and increase the overall system stability.

Use: Enable or disable the system restart feature.

Day: Select a date for system restart.

Time: Select a time for system restart.

7 Etc

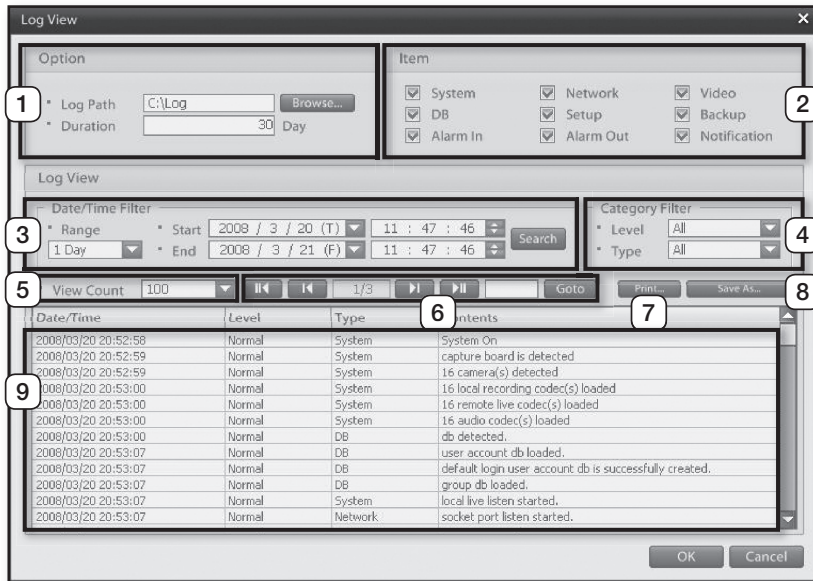
Log Information: This feature records all DVR system operational processes. The log feature allows you to easily identify and correct system issues.

S/W Upgrade: Use this feature to upgrade your DVR software.

Import/Export: Use to backup the setup profile of the system to a storage device or to import a setup profile from a storage device to the system.

Log information

The log menu records all DVR system operation processes.



1 Options

Log Path: Displays the file path for storing the log file. Click on the Browse button and select the path you wish to store the log file.

Duration: Enter the amount of time you wish to store the log file. Your system will maintain the log file for the duration you specify. Any data older than the duration will be deleted from the system.

2 Item

System: Select to store the system information log.

Network: Select to store the network information log.

Video: Select to store the video loss and video input log.

DB: Select to store the database information log.

Setup: Select to store If configuration data has changed.

Backup: Select to store the backup information log.

Alarm In: Select to store the sensor (alarm-in) event log.

Alarm Out: Select to store the alarm (alarm-out) event log.

Notification: Select to store the emergency status and other externally-sourced information log.

3 Date/Time Filter

This feature filters out the log data using defined parameters.

Range: Select the desired range of dates for log data search.

Start: Select the starting date and time for log data search.

End: Select the ending date and time for log data search.

Search: Click on the Search button to commence log data search using the defined start/end date and time parameters.

4 Categorization Filter

Extracts and displays log data that meets designated level and type conditions.

Level: Select the desired log list level.

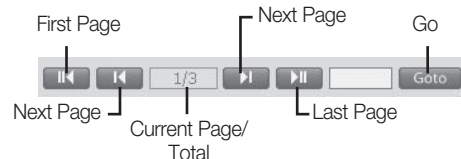
Type: Select the desired log item type.

5 View Count

Select the maximum number of lines to be displayed on the log list. Log entries beyond the selected number are carried over to the next page.

6 Page Control

Use to flip through the log list pages.



7 Print

Prints the log data.

8 Save as...

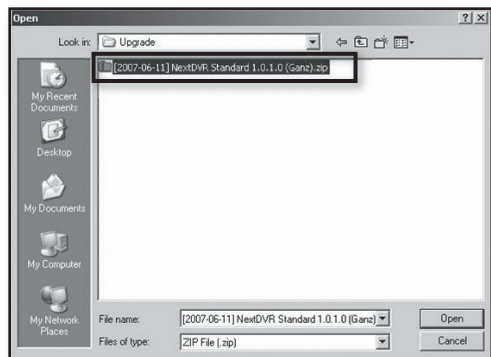
Copies the log data to a different media.

9 Log List

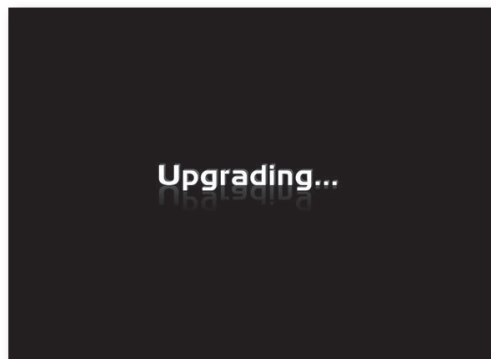
Displays the search results for the log.

Upgrading Software

1. Click on the **Software Upgrade** button to upgrade the system software.
2. From the following window, select the software upgrade package file (.zip format).



3. Click on the **Open** button to start the software upgrade.



4. Once the software upgrade has completed, the DVR application will restart.

Import/Export



- 1 Path**
Displays the location for exporting/importing the system profile.
- 2 Path Button**
Select the location for exporting/importing the system profile.
- 3 System Profile List**
Displays system configuration components. Select the desired system configuration component and commence the import or export process.
- 4 Import**
Imports a system profile file onto the system from an external storage device.
- 5 Export**
Exports the current system profile file to an external storage device.

Date/Time

Configure the current date and time for your DVR system. Select the time zone for your current location and if you desire to set the time by synchronizing with a NTP (Network time protocol) server.

The screenshot shows the 'Setup' window with the 'Date/Time' tab selected. The window has a top navigation bar with tabs: Hardware, Recording, Event, Backup, Network, and System. Below this is a sub-navigation bar with 'User', 'Setting', 'Date/Time', and 'Information'. The 'Date/Time' section contains four main areas: 1. Date/Time Setup: Fields for Date/Time (2008 / 3 / 21 (F)), Time zone ((GMT+09:00) Seoul), Date Format (YYYY/MM/DD), and Delimiter (/). Buttons for 'Get internet time' and 'Update' are present. 2. Time Server: A field for 'Server' (time.windows.com) and buttons for 'Add' and 'Del'. 3. Automatic setup: Checkboxes for 'time setting when reboot' and 'schedule time setting'. Under 'Automatic setup', there are radio buttons for 'Hourly' and 'Daily'. The 'Daily' option is selected, showing a time of 12 hour and 1 day. 4. Overwrite option: A warning message and two radio button options for handling data between the current time and the newly set time.

1 Date/Time Setup

Use to designate a time zone for the DVR system and set the Current date and time.

Date/Time: Use to update the system's time and date settings. Click on the Get internet time button to acquire the current time from the NTP server. Clicking on the Update button applies newly configured time as the system's current time.

Time Zone: Select the time zone for your area. Click on the Update button to apply the selected time zone to the system.

Date Format: Select the date format that you wish to use.

Delimiter: Select a character to use for separating the day, month and year

2 Time Server

Enter the address of the NTP server you wish to synchronize with the DVR. Click on the Add button to register additional NTP servers. Click on the Remove button to remove a registered NTP server addresses.

3 Automatic Time Synchronization Settings

This feature automatically synchronizes your system's time with the NTP server.

Automatic Time Sync at Boot-up:

Synchronizes the system's time with the NTP server every time the system restarts.

Schedule time setting: Synchronizes the system's time with the NTP server at scheduled intervals.

4 Overwrite Option

When a Newly configured time is earlier than the present system time, this option is used to decide whether or not to delete data recorded between those two times. The first option will overwrite the data recorded between those two times and updates the system time with the new configuration. The second option does not overwrite data recorded previous to the original time. The recording will commence again once the system time has realigned with the original system time.

05 SYSTEM SETUP

This menu displays the information about the DVR system and Hardware.



1 System
This displays the DVR system operating system, processor type, memory, graphic card, LAN card and HDD information.

2 System Info
This displays the DVR systems name, location, software version, model, administrator name and A/S Diary.

System Setup _51

Search

SEARCH SCREEN

Search mode enables you to search video recordings, audio data, and events. In addition, the mode offers multiple-camera search and various image ratio and zoom-in/zoom-out features. Also you can bookmark or make a screen capture of still images and export a backup recording to DVD RW or USB storage devices.



1 Video Display Window

Video playback is shown in this area.

2 Time Display

Displays the current time.

3 Split Buttons

These buttons indicate 4-, 6-, 9-, 10-, 13-, and 16-split screen modes.

4 Search Date

Select the desired search date and time.

5 Camera Button

Select the cameras you wish to search.

6 Timeline

Displays recording data for each camera channel.

7 Playback Control

Select to playback video data in forward and reverse modes. Control the playback speed and adjust the volume level for audio data.

8 Adj./Event/Info

Adj.: These controls are used to adjust the brightness, contrast, sharpness level and zoom controls on the video data.

Event: Displays the event list. Selecting an event on the list will launch the playback of the selected event.

Info: Displays recording period and the total number of days recorded.

9 Calendar

Indicates days on which recording data exists. Selecting a date that contains recording data enables you to search recordings on that date.

10 Snapshot

This feature takes still images from the video display window and saves them as a JPEG or BMP file.

11 Printer

Prints the current video image displayed.

12 Refresh

Refreshes the timeline with the most recent recording data.

13 Menu Buttons

Watch: Accesses the Live Watch screen.

Search: Exit from the Search screen.

Advanced Search: Accesses the Advanced Search screen

Backup: Accesses the Backup configuration screen.

Setup: Accesses the System Setup screen.

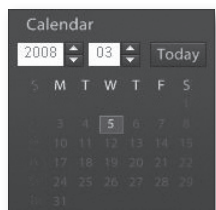
Exit: Use to terminate the DVR program or the system.

SEARCH DATE AND TIME SELECTION

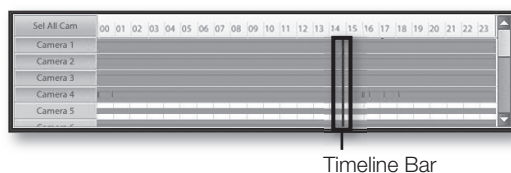
Use the calendar to move between days, months and years. Selecting a date that contains recording data enables you to search recordings for that day.

Selecting Search Date And Time

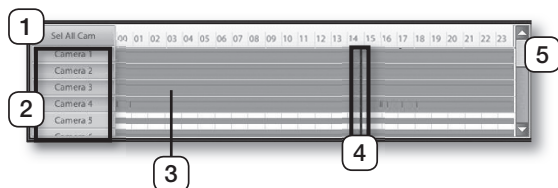
1. From the **calendar**, select the date you wish to search.



2. Move the timeline bar left and right to select the timeframe you wish to search.



TIMELINE



- 1 **Sel All Cam**
Use to select or deselect all cameras.
- 2 **Camera**
Use to manually select individual cameras.
- 3 **Recording Timeline**
Provides color-coded graphical display of recording durations and modes.

Orange	Continuous Recording
Blue	Motion Recording
Grey	Object Watch Recording
Green	Alarm In Recording
Yellowish Green	PreAlarm Recording
Dark Blue	POS Recording

Yellow	Video Loss
Purple	Instant Recording

4 Timeline Bar

Move the timeline bar left and right to select the desired search time.

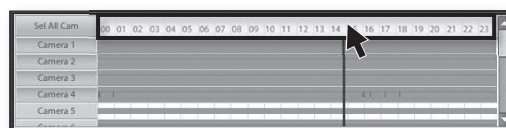
5 Scroll

Move the scroll bar up or down to view additional camera channels that aren't currently displayed.

It's possible to change the scale of the timeline. Left-click on the time scale to select up to five levels of zoom. This feature can be used when precise control in a smaller interval is needed.

Timeline Zoom-In

1. Left-click on the time scale.



2. You will zoom-in closer with each left-click of the mouse.

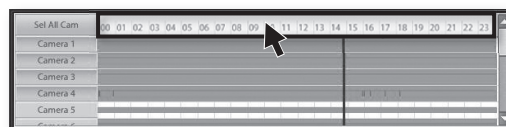


Timeline Zoom-Out

1. Right-click on the time scale.



2. You will zoom-out farther away with each right-click of the mouse.

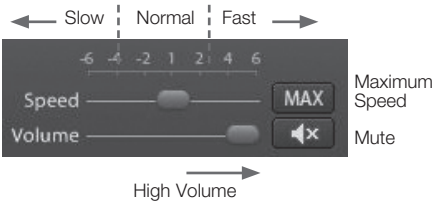


SEARCH SCREEN PLAYBACK

Playback

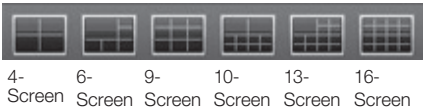
Select the camera channel and date for playback. Then, click on the play button to start playback of the recording.

	First recorded Data
	Single Frame Reverse
	Reverse Playback
	Forward Play
	Stop
	Single frame forward
	Last recorded Data



SPLIT-SCREEN SETUP

You can select a split-screen mode for search screen playback.



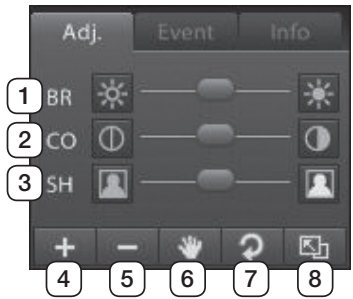
SCREEN ADJUSTMENT

Picture Quality Adjustment

1. From the search screen, select the camera channel you wish to adjust.




2. Click on the Adjust tab to access picture adjustment controls.



- 1 BR**
Use to adjust the brightness level of the video image.
- 2 CO**
Use to adjust the contrast level of the video image.
- 3 SH**
Use to adjust the sharpness level of the video image.
- 4 Zoom-In**
Use to zoom-in on specific sections of the video image.
- 5 Zoom-Out**
Use to zoom-out from specific sections of the video image.
- 6 Move**
Use to move about the video recording after zooming-in on a specific section.
- 7 Reset**
Resets video recording picture quality settings back to default.
- 8 Expand Screen**
Use to expand or shrink the video recording.

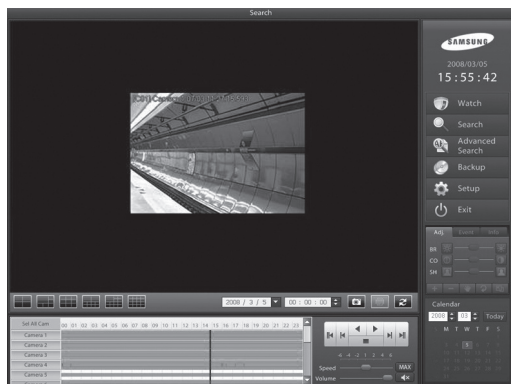
- Adjust the brightness, contrast, and sharpness levels by using the **BR**, **CO**, and **SH** slide bars.



- To restore picture quality settings to default, click on the  button.



Expanding/Shrinking the Screen

- From the search screen, select the channel you wish to expand or shrink.




- Click on the  button to expand or shrink the screen.



Video Zoom-In

- Playback the recording period of interest.
- From the search screen, select the channel you wish to zoom-in.
- Click on the  button. The mouse pointer will then turn into .
- Place the mouse pointer over the section you wish to zoom-in.
- Left-click on the mouse to zoom-in on that section.




- To deactivate the zoom-in feature, click on the  button once more.



Video Zoom-Out

1. From the search screen, select the channel you wish to zoom-out.
2. Click on the  button. The mouse pointer will then turn into .
3. Place the mouse pointer over the section you wish to zoom-out.
4. Left-click on the mouse to zoom-out from that section.



5. To deactivate the zoom-out feature, click on the  button once more.

Video Move

1. Zoom-in on the video.
2. Click on the  button. The mouse pointer will then turn into .
3. Click on the video section you wish to move and drag.



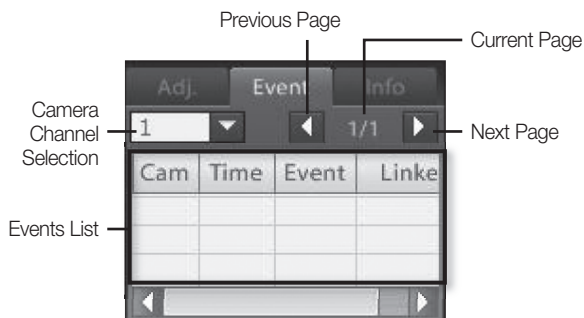
4. To deactivate the move feature, click on the  button once more.

EVENT SEARCH

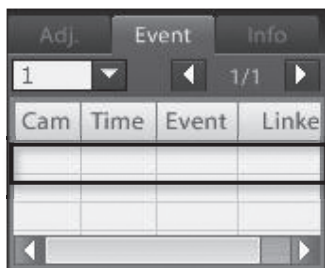
This feature displays events that have happened on the DVR system. All events, including motion and sensor detection events, get populated on an the event list. By double-clicking on a particular event from the list, you can playback the video recording associated to that event.

Searching Events

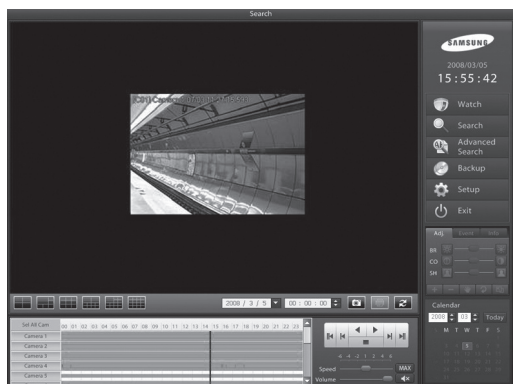
1. Click on the **Event** tab to start events search.



2. From the event list, double-click on the event you wish to search.



3. The video recording associated to the selected event will be displayed on the search screen.



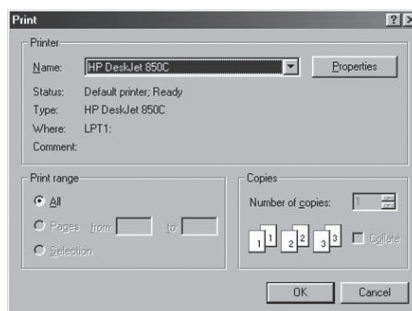
PRINTING

Printing Search Screen

1. Select the search screen you wish to print.

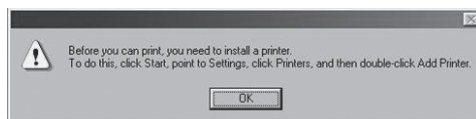


2. Click on the  button and the following window will be displayed. Then select a printer.



3. Click on the  button to start printing.

The following error message will prompt if your printer has not been configured properly:



Printer Configuration

1. Click **Start → Settings → Printers**.
2. In this window, double-click on Add Printer.
3. When Add Printer Wizard starts, click Next.
4. If your printer is connected to the PC, select the local printer option and then click Next.
5. When prompted for the make and model of your printer, either click on the Have Disk... button or select an appropriate driver for your printer.
6. Follow the instructions on screen to install the driver and finish configuring your printer.

Print Size

1. By default, images are printed the same size that they are displayed on the screen.

Printing Failed

1. Verify that your printer has been configured properly in Windows.
2. If the printer has been properly configured but the problem persists, check that the printers printer and power cables are connected properly.

advanced search

EVENT SEARCH

Event Search is a feature that searches and displays only the video recordings created by motion detection, sensor detection, alarm, object detection, and video loss events.



- 1 Video Display Window**
Searched video recordings are shown in this area
- 2 Options:**
Event: Select the type of events you wish to search.
Continued Search: Set the amount of events to show for each search. Tick the continued search box to make search continue from the last time entry of a preceding search.
Start & End: Use to define the search timeframe. This timeframe can be configured by right clicking the timeline and dragging or enter manually into the boxes.
- 3 Search**
Click to start the search process.

- 4 Event List**
Search results are displayed in this section. Selecting an event from the list launches the video recording associated to that event.

Alarm In	Sensor signal detection recording event
Object Watch	Object detection recording event
Motion	Motion detection recording event
Video Loss	Video loss recording event
Instant Recording	I-REC button-initiated recording event
POS	POS transaction-initiated recording event
Pre Rec	Pre Rec (Motion or Alarm In) recording event

SEQUENTIAL SEARCH

Sequential Search is a feature that displays video recordings from a selected channel in a chronological sequence.



1 Video Display Window

Initiating Sequential Search creates a continuing series of video images from the selected camera channel under a selected split-screen mode.

2 Split Buttons

Use to select the desired split-screen mode for the Sequential Search.

3 Camera Buttons

Used to designate which channel to use for Sequential Search.

4 Playback Panel

Used as the play button to initiate Sequential Search.

THUMBNAIL SEARCH

Thumbnail Search is a feature that divides 24 hours of video recording into selected time units and displays the results as thumbnails.



1 Video Display Window

Searched video recordings are shown in this area.

2 Options

Intervals: Use to define the time unit for Thumbnail Search. 24 hours of video recording can be divided into units of 1 hour, 30 minutes, 10 minutes or by a user-defined time period.

Continued Search: Set the amount of thumbnails to show for each search. Tick the continued search box to make search continue from the last time entry of a preceding search.

Start & End: Used to define the search timeframe. This timeframe can be configured by right-clicking the timeline and dragging or enter manually into the boxes.

3 Search

Click the Search button to start the Thumbnail Search.

4 Thumbnail Time Scale Up

Reduces the time interval for the thumbnail search in the scale, 1hour → 30minutes → 10 minutes → 1 minute.

5 Thumbnail Time Scale Down

Increases the time interval for the thumbnail search in the scale, 1 minute → 10 minutes → 30minutes → 1hour.

6 Thumbnail Size

Use to increase or decrease the size of thumbnails.

7 Thumbnail Window


The search result is displayed in this section. Results are displayed as thumbnails.

OBJECT SEARCH

This feature is used to search for when objects have appeared and disappeared in a user designated zone.

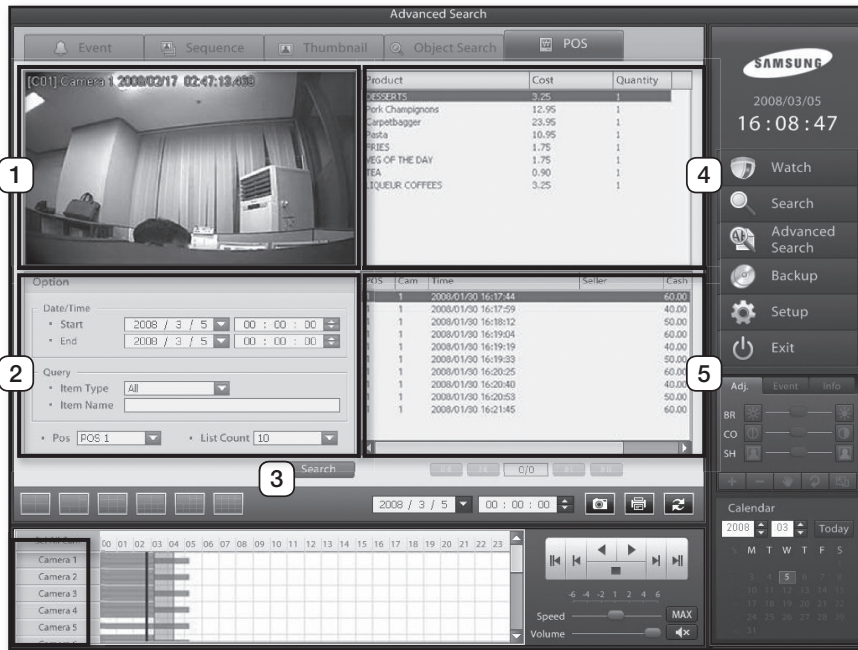


- 1 Video Display Window**
This section is where you define object detection zones and shows a video image of the selected camera. To search for changes on a selected channel. Mark a zone(s) on the grid at the area of interest.
- 2 Options**
Define the object search timeframe and monitoring zone sensitivity.
Set: Use to designate the search sensitivity.
Area Edit: Use to select the whole screen and clear the screen or use select block to pick individual blocks in the grid.
Continued Search: Set the amount of thumbnails to show for each search. Tick the continued search box to make search continue from the last time entry of a preceding search.
Start & End: Use to designate the search timeframe.

- 3 Search**
Click the **Search** button to start the object Search
- 4 Object Detection Window**
Search results are displayed in this section. Displays video images in which a change has been detected inside the object detection zone.
 With the search timeframe configured as 00:00:00 to 24:00:00, video data analysis may require a long time to finish if the subject data contains numerous object change events. For this reason, SEC recommends that you search in 1-hour timeframe intervals.

POS SEARCH

POS Search is a feature that searches video data that has been recorded in sync with transaction records taken from a point of sale device.



- 1 Video Display Window**
Searched video recordings are shown in this area
- 2 Options**
Date/Time: Use to designate the search timeframe.
Query: Search POS database information using user-designated parameters.
POS: Select the ID of the POS device connected to the DVR (1 through to 16).
List Count: Use to define the number of returns shown in the event list.

- 3 Search**
Use to search POS transaction records.
- 4 Products**
Displays a list of products transacted at the POS.
- 5 Events List**
Displays a list of POS events.

Backup

BACKUP

Create a backup of recorded data from the DVR to a different storage device.

The screenshot shows the 'Backup' configuration window. It has a 'Backup' tab and a 'Management' tab. The 'Backup' tab is active. It contains several sections: 'Format' (1) with radio buttons for Time, AVI, SFX, BMP, and JPEG; 'Range' (3) with start and end date/time pickers; 'Source' (2) with a 'Server' dropdown set to 'LocalServer'; 'Destination' (4) with 'Server', 'Media', 'Device', and 'Path' dropdowns, and a 'Setting' button; 'Camera' (5) with a grid of checkboxes for 16 cameras; 'Option' (6) with checkboxes for Continuous, Alarm, Pre Rec, Motion/Object Watch, Event, and Audio; and 'Size' (7) with an 'Estimated Size' field, '0 Bytes', and a 'Calculate' button. A 'Start' button is at the bottom right.

1 Format

Use to select a desired backup format. Supported formats are time designation (**Time**), video files (**AVI** and **SFX**), and still images (**BMP** and **JPEG**).

Time Backup (Time)	An internal storage method used for backing up large amounts of data.
AVI Backup	This option stores data in .avi format, which is playable in Windows Media Player and other generic media player applications.
SFX Backup (auto execute file backup)	This option backs up data along with an auto execution video player application. When backed up in this format, opening a backup file automatically launches a video player for playback. SFX backup's maximum capacity is 4GB.
BMP/JPEG Backup	Use to backup video recording by a single frame. Supports .bmp and .jpeg formats.

2 Source

Shows the source of the backup.

3 Backup Sched

Designate start and end times for the backup.

4 Backup Destination

Server: Select a backup destination.

Media: Select a backup device.

Drive: Shows the backup device drive letter.

Path: Select a specific backup path.

5 Camera

Select camera channels you wish to backup. In **AVI** and **SFX** backup formats only single channel backup is available.

6 Option

Continuous: Select if you wish to back up continuous recording data only.

Motion/Object Watch: Select if you wish to back up motion detection recording data only.

Alarm (Sensor): Select if you wish to back up alarm (sensor) detection recording data only.

Event: Select if you wish to back up instant recording data or video loss recording data.

Pre Rec: Select if you wish to back up PreAlarm recording data only.

Audio: Select if you wish to back up audio data only.

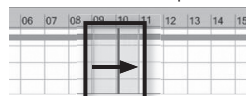
7 Size

Use to calculated backup data size.



• Selecting Backup Timeframe using the timeline.

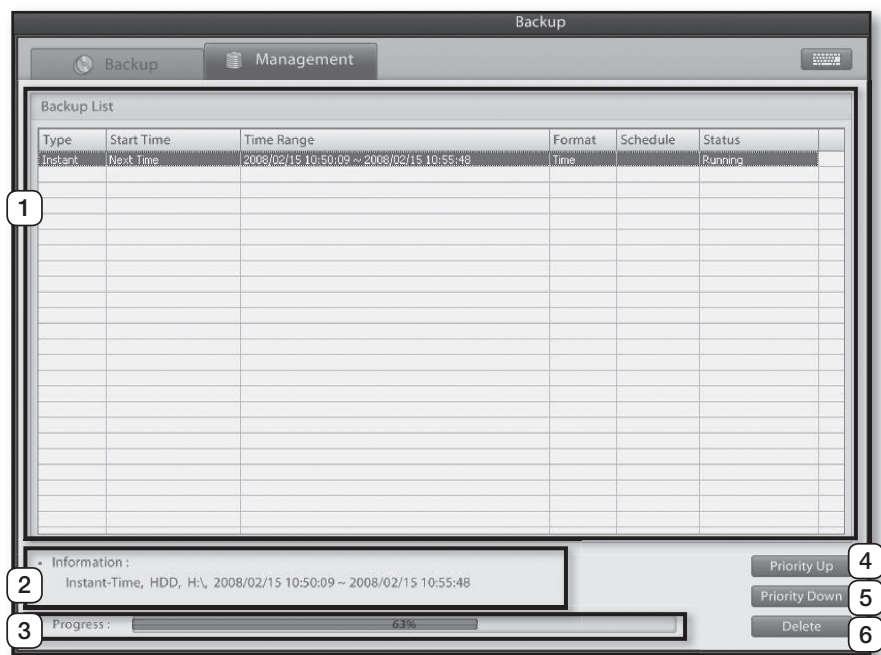
1. From the timeline, right-click and drag over the desired backup timeframe.



2. With the desired timeframe highlighted, click on the Backup button to automatically apply the selected backup timeframe into the backup settings.

BACKUP MANAGEMENT

Displays the backup information including time range, cycle, format and backup media. Backup is performed in chronological sequence on the backup schedule list.



1 Backup List

Displays a list of running and scheduled backup tasks. Completed tasks will disappear from the list in the order of their completion.

2 Information

Displays information of the current backup.

3 Progress

Progress
Displays the progress of the current backup.

4 Priority Up

Moves the selected backup to a higher priority for the backup to start.

5 Priority Down

Moves the selected backup to a lower priority for the backup to start.

6 Delete

Deletes selected backup events from the schedule list.

- 

- Scheduled backup entries (configured in the setting menu) cannot be deleted from the Backup Management screen. In order to delete these entries, please do so in the menu under Backup → Backup Schedule.

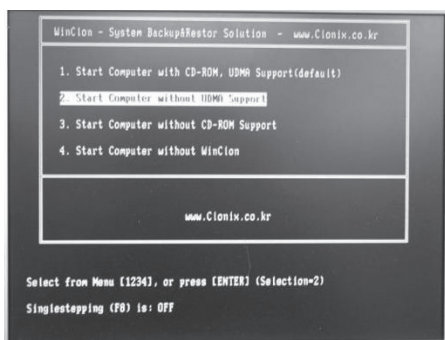
appendix

System Recovery

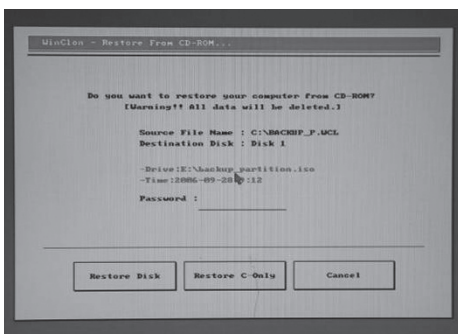
System Recovery CD allows you to easily recover the DVR system upon a system error.

Using the System Recovery CD

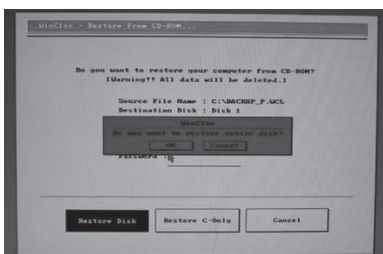
1. Turn the system on.
2. Insert the System Recovery CD in the CD drive.
3. Restart the system.
4. Press the F8 key during boot up.
5. Once booted from the CD, the following screen will be shown.
6. Select "2. Start Computer without UDMA Support".



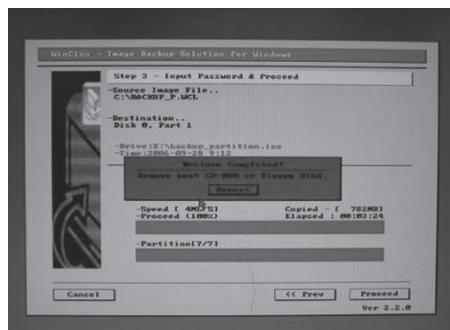
7. Select Restore Disk to recover the hard disk. (There is no password.)



8. Click on the OK button to start the recovery process.



9. Once the recovery process has completed, a warning tone (beep) will sound.
10. Click on the Reboot button.



11. After restarting, the system will automatically commence backing up the operating system.



12. Following operating system backup, the system will automatically restart.
13. Windows will load and launch the DVR software.

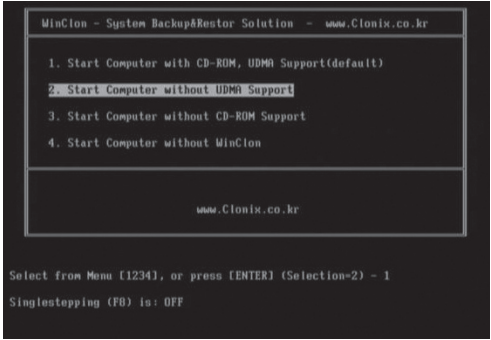
The recovery CD can be used to recover the system when replacing the Windows-installed hard disk due to a malfunction or when experiencing a critical system error. For situations not involving physical damage and other types of critical malfunctions, hence situations in which the system can be restarted, the system can be recovered using system recovery data stored on the hard disk.



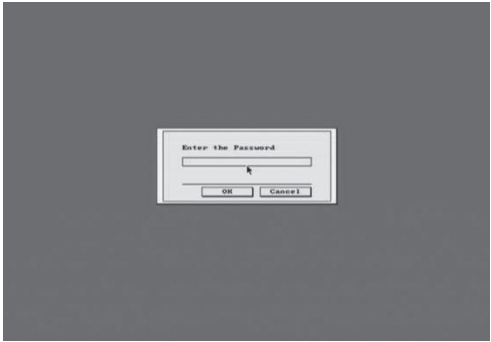
- If recovering the system from the hard disk, it will be possible to maintain and access recorded data intact. Data damage due to physical error of the hard disk or a user error, however, can lead to permanent loss of existing recorded data.

System Recovery from the Hard Disk

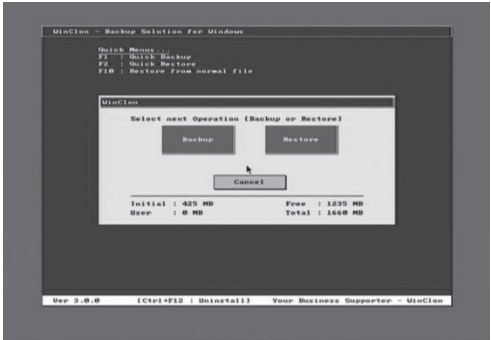
- 1. Restart the system.
- 2. Click on the F10 key during boot up to access the WinClon menu.



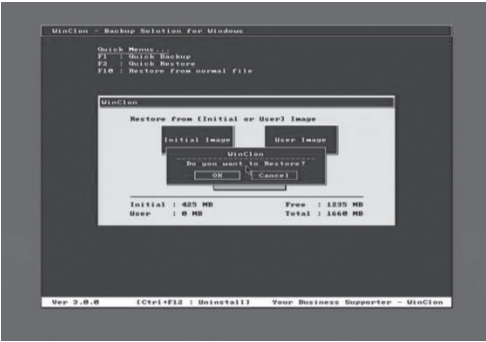
- 3. With the No.2 option preselected, press the enter key to commence the recovery process.
- 4. When prompted for the password, click on the **OK** button to continue with the recovery. If the mouse is unresponsive, use the tab key to select the **OK** button.



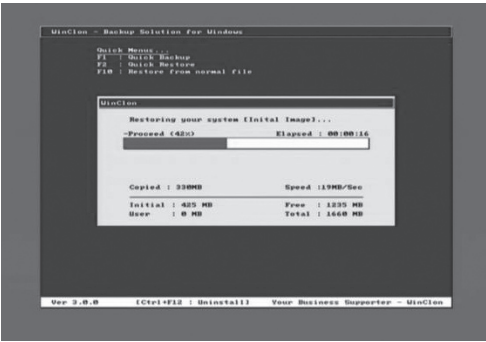
- 5. From the Backup and Restore menu screen, click on the Restore button to start the recovery process.



- 6. Then, from the Initial Image and User Image screen, click on the Initial Image button and then the **OK** button.



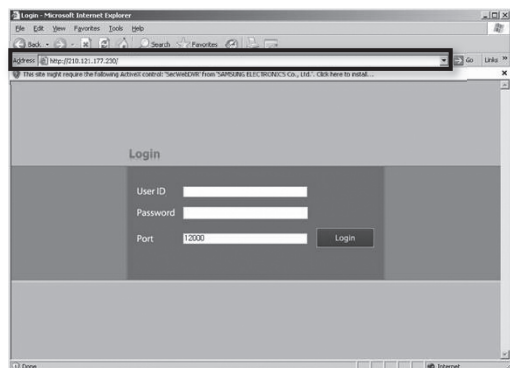
- 7. A screen displaying the recovery progress will be shown.



- 8. Once the process has completed, the system will restart. The recovery process is a success if the operating system functions normally.

Connecting to WebDVR

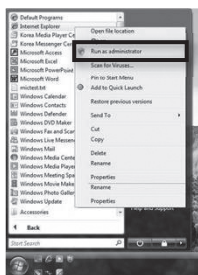
1. Enter the IP address of the DVR you wish to connect to the address field of your web browser



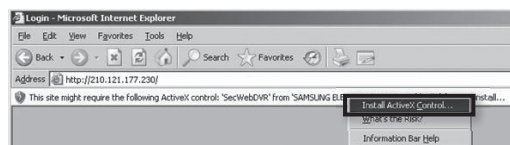
- In order for WebDVR to function normally on Windows Vista, Internet Explorer must be launched in administrator mode. Launching the application as an administrator makes it possible to download and install ActiveX software.

- To launch Internet Explorer as an administrator:

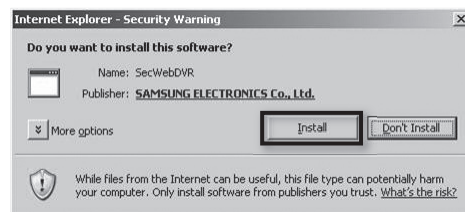
1. Click on Start.
2. Place the pointer over Internet Explorer in Programs and right-click.
3. Click on Run as Administrator from the popup menu.



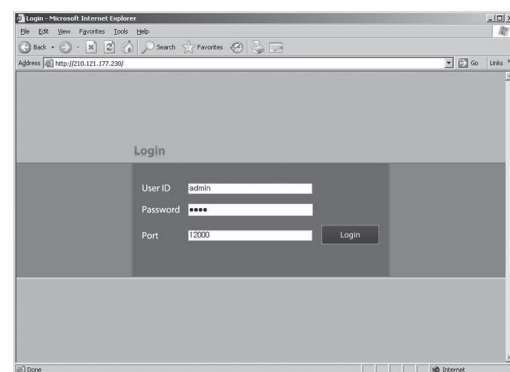
2. When prompted with an ActiveX Control installation message as shown below, left-click on the message.



3. Click the install button from the window that appears.



4. Once the installation is complete, Internet Explorer will display the following screen. Enter the user ID and password and click on Login to connect to the DVR.



Watch



1 Video Display Window

The live video feed is shown in this area.

2 Live Watch

Click to move to the Live Watch screen.

3 Playback

Click to move to the Search screen.

4 Split Buttons

These buttons indicate 4-, 6-, 9-, 10-, 13-, 16-, 25-, 33-, and 36-split screen modes. Use to select the screen split you would like to view.

5 Search Date & Time

Select the desired search date and time.

6 Timeline

Provides a graphical display of recording data for the selected camera channel.

7 Refresh

Refreshes the timeline with the most recent recording data.

8 Playback Control

Controls for video recording playback. Use to move to the very beginning or the end of the video recording and to play in either forward or reverse direction.

9 Switch to Live

This button reverts the 1-channel playback screen back to the live feed screen.

10 Speed/Volume

Used to configure the playback speed and volume.



- Audio output is available for 1X forward playback only.

WebDVR Search Screen




- 1 **Video Display Window**
Video recordings are shown in this area.
- 2 **Split Buttons**
Split-screen buttons used to split the screen into different configurations.
- 3 **Search Date & Time**
Select the desired search date and time.
- 4 **Timeline**
Indicates recording data of each camera.
- 5 **Playback Control**
Controls for video recording playback. Use to move to the very beginning or the end of the video recording and to play in either forward or reverse direction.

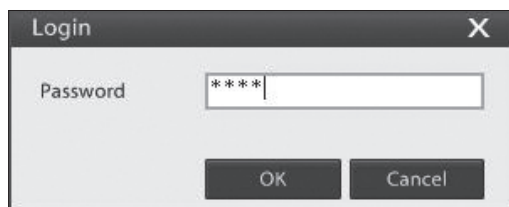
- 6 **Refresh**
Refreshes the timeline with the most recent recording data.
- 7 **Speed/Volume**
Use to configure the playback speed and volume.
 - Audio output is available for 1X forward playback only.

Viewer Installation

1. Insert the **SPR Smart Viewer software CD** and launch the **setup.exe** file.



2. Follow the instructions of the installation wizard.
3. Once the program installation has completed, click on the Finish button to exit.
4. An SPR Smart Viewer icon like the one shown below will be created on your desktop. Double click on the  icon to launch the SPR Smart Watch program.
5. Enter the password from the login window (password: 4321).



Watch Screen



1 Video Display Window

This screen displays the live video feeds and 1 channel playback.

2 Split Buttons

These buttons indicate 4-, 6-, 9-, 10-, 13-, 16-, 25-, 33-, 36- and 64-split screen modes.

3 Switch Screen/Full Screen/Switch to Live/Instant Recording/Two-Way Audio

Switch Screen (Icon): Switches through camera channel feeds in sequence.

Full Screen (Icon): Expands the video feed to full screen view.

Switch to Live (Icon): Reverts 1-channel playback screen back to live feed screen.

Instant Recording (I-REC):

In the event of an emergency, clicking on the I-REC button initiates all camera channels to start continuous recording, regardless of the recording schedule. This button becomes active after logging in.

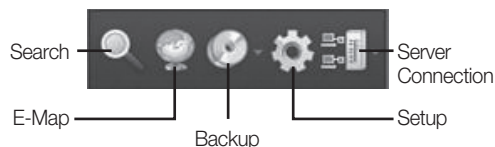
Two-Way Audio (Icon): This feature is used for two-way audio communication between the Viewer and DVR site.

4 Log/PTZ/Playback Tabs

The Log tab displays system events, the PTZ tab contains PTZ control features, and the Playback tab offers selected channel playback controls.

5 Menu Buttons

These buttons are used to access Search, E-Map, Backup, System Setup, and Server Connection screens.




6 Resource List

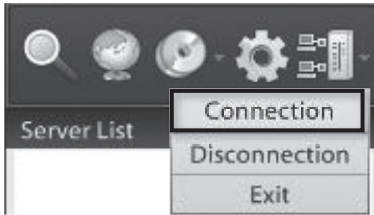
Provides a hierarchical view of resource information on cameras, alarm-ins, and alarm-outs making up the system. Drag the camera and drop over the desired location on the Video Display Window to position the selected camera's video feed to that location.

7 Hard Drive Space

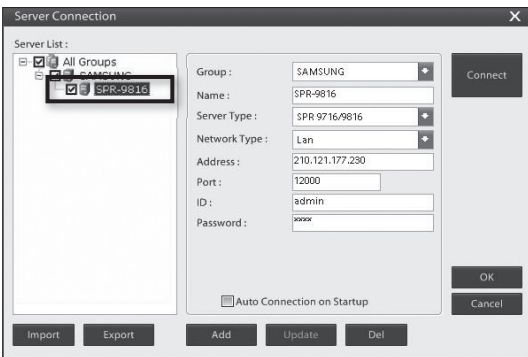
Displays the total capacity of the system's hard disk and the amount of space used as numeric and percentage values.

Connecting to DVR Server

1. Click on the  button to add a remote DVR server to the Connection list or to connect to a remote DVR server. Click on the Connect button to launch the Server Connection window.




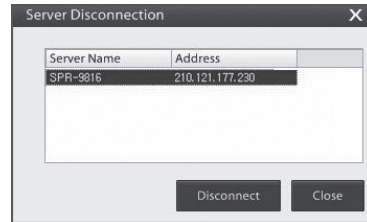
2. Select the DVR you want to connect to from the server list.



3. Click on the Connect button to open a connection with the selected DVR server. Here, the DVR server will not be displayed on the server list if a connection cannot be established due to improper server connection settings, or the DVR server being powered off.

Disconnecting from DVR Server

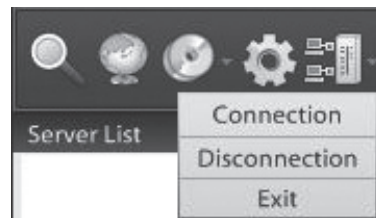
1. Click on the  button and then the **Disconnect** button.
2. From the Server Disconnection window, select the DVR server you wish to disconnect.



3. Click on the **Disconnect** button to sever the connection with the selected DVR server.
4. Click on the **Exit** button to close the Server Disconnection window.

Exit SPR Smart Watch

1. Click on the  button and then click the **Exit** button to exit to Windows.

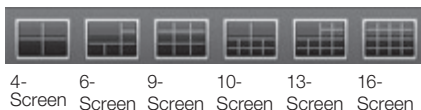


Search



- 1 Video Display Window**
This is where recorded video is played back.

- 2 Split Buttons**
Video Display Window can be split into 4-, 6-, 9, 10, 13-, or 16-split screens.



- 3 Search Date**
Select the desired search date and time.

- 4 Camera**
Select the cameras you wish to search.

- 5 Timeline**
Timeline features three levels of zoom. The zoom feature can be used when you require detailed view of the recorded data bar..

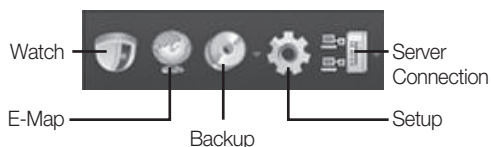
- 6 Recording Timeline**
Displays recording times and recording types in a graph format.

Orange	Continuous Recording
Blue	Motion Recording
Grey	Object Watch Recording
Green	Alarm In Recording
Yellowish Green	Pre Rec Recording
Dark Blue	POS Recording
Yellow	Video Loss
Purple	Instant Recording

- 7 Timeline Bar**
Identifies the location of the time you wish to search. Move the timeline bar left and right to select the desired search time.

- 8 Time Display**
Displays the current time.

- 9 Menu Buttons**
These buttons are used to access Search, E-Map, Backup, System Setup, and Server Connection screens.



- 10 Server List**
Displays a list of DVR servers connected to SPR Smart Viewer.

- 11 Calendar**
Indicates recorded data location in calendar format. Dates with recorded data will be highlighted in a different color.

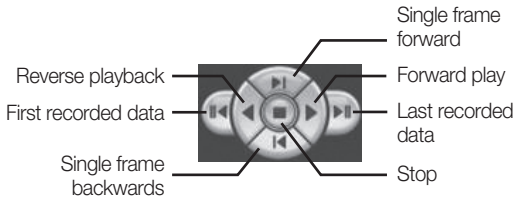
- 12 Bookmark**
Use to mark search locations during video recording search.

- 13 Event**
Displays alarm-in, motion detection, and other types of events on the list. Selecting an event from the list displays the video recording from the timeframe in which that event took place.

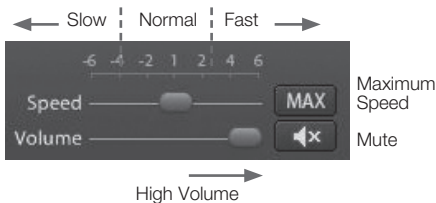
14 Adjustment
Enables you to edit the selected video. Adjusts or restore the brightness, contrast, and sharpness levels of the video and adjust the zoom level.

15 Print
Use to print recorded video images.
(Print feature can only be used from single screen zoom-in states.)

16 Refresh
Refreshes the timeline with the most recent recording data.



18 Playback Speed /Volume Control
Enables the user to control the speed and audio volume of video recording playback.



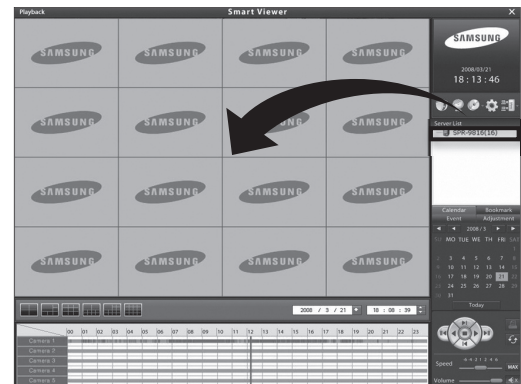
DVR servers connected via a network can be allocated to the video display window to search the DVR server's video recordings.

Allocating DVR Server to the Video Display Window

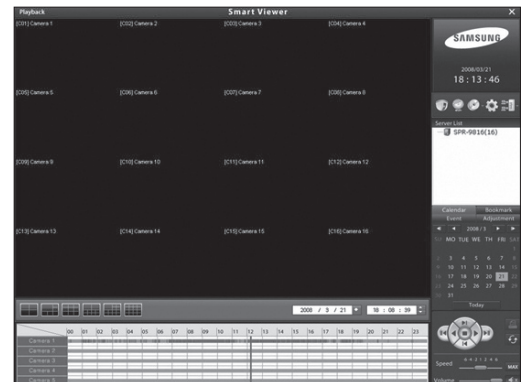
1. From the DVR server list, select the remote DVR server you wish to search.



2. Drag and drop the DVR server onto the video display window.

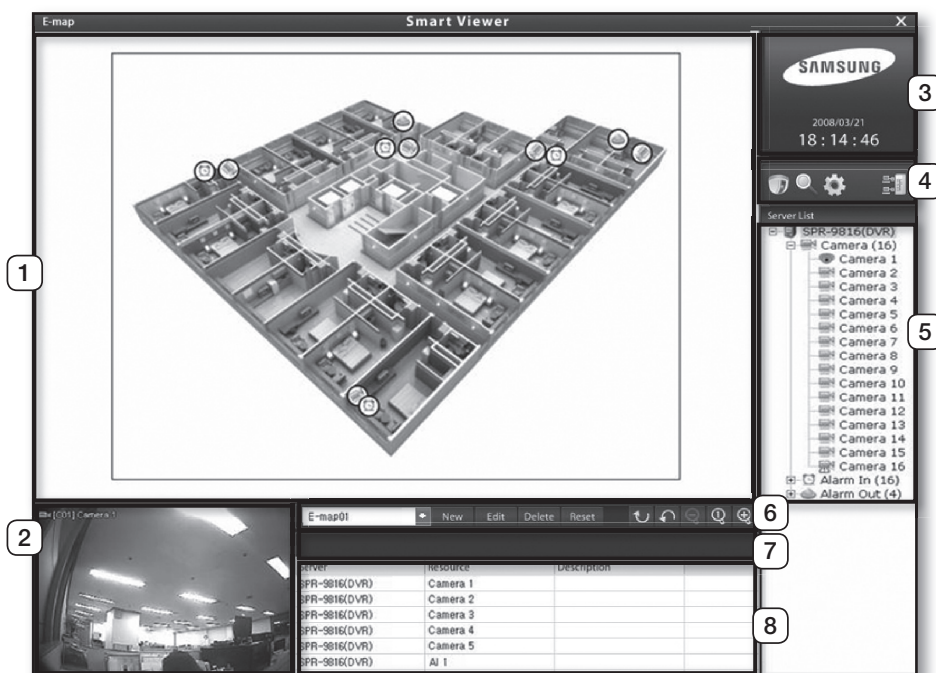


3. Recording information from the selected DVR server will be displayed on SPR Smart Playback.



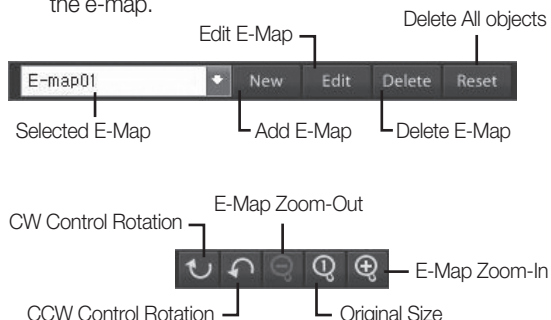
4. To search other DVR servers, repeat steps 1 and 2.

E-map



- 1 Map Display Window**
Displays the Emap picture with the registered cameras and alarms.
- 2 Camera Feed Display Window**
Selected camera from the Emap or dragged from the server list will be displayed in this screen.
- 3 Time Display**
Displays the Samsung logo and the current time.
- 4 Menu**
These buttons are used to access Search, E-Map, Backup, System Setup, and Server Connection screens.
- 5 Server List**
Provides a hierarchical view of resource information for cameras, alarm-ins, and alarm-outs on each server.
- 6 E-Map Control**
Use to register a new e-map or edit/delete an existing one. The Reset button deletes all placed camera, alarm-in, and alarm-out controls from the e-map.

- 7 Information Display**
Displays information about the camera or control device selected from the e-map.
- 8 Device List**
Displays a list of devices registered on the e-map.

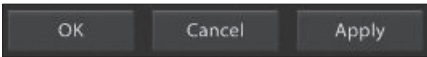


Setup menu category buttons



- Access the difference setup categories using these buttons.
- Setup categories include **Hardware**, **Screen**, **Schedule**, **Event**, **Backup**, **Network**, and **System**.


Saving/Cancelling Changes



- **OK:** Closes the configuration window and saves all changes.
- **Cancel:** Closes the configuration window without saving any of the changes.
- **Apply:** Keeps the configuration window open and saves all changes.

Virtual Keyboard



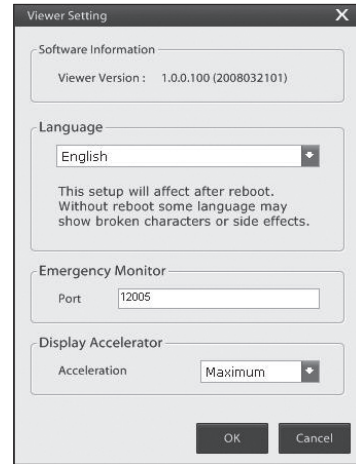
- Click on the  button to launch the virtual keyboard.
- Using your mouse, click on the characters of the virtual keyboard to make key entries.



Viewer Configuration

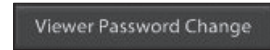


- Click on the **Viewer Setting** button and the following window will prompt:



- **Software Information:** Displays the software version of the Viewer.
- **Language:** Provides multilingual support. The user can select from a list of language options.
- **Emergency Monitor:** Enter the port number for streaming the emergency monitor.
- **Display Acceleration:** Select the level of display acceleration.

Viewer Password Change



- **Password:** Enter the current password.
- **New Password:** Enter the new password.
- **Confirm New Password:** Reenter the new password to confirm.



- For further details, please refer to SPR Smart Viewer's user manual.

Remote Desktop Control

Remote Desktop Control consists of a server and a client and must be installed between the server and the client in order to facilitate TCP/IP-based connection to the client from the server. By designating the Viewer as the server, it then becomes possible to use the Viewer like a local PC via the client. Remote desktop software includes RealVNC, pcAnywhere, Radmin, and more.



VNC Server	Server software that supports remote control services.
VNC Viewer	Client software required for connecting to the server from a remote PC.

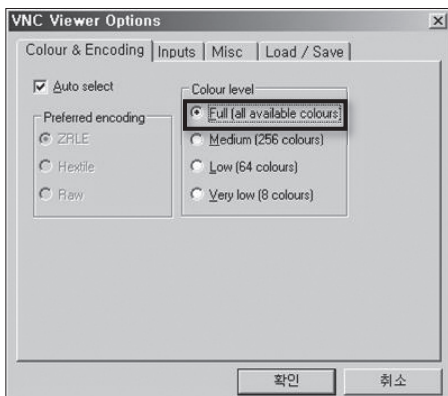


Color Level Configuration

- When using remote desktop with Viewer, use one that supports 32-bit color level. Video cannot be displayed on screen if using a remote desktop that does not support 32-bit color.
- The Remote Desktop Connection feature of Windows XP is limited to 24-bit color and therefore does not support video display in the Viewer.

32-bit Color Configuration in VNC Viewer

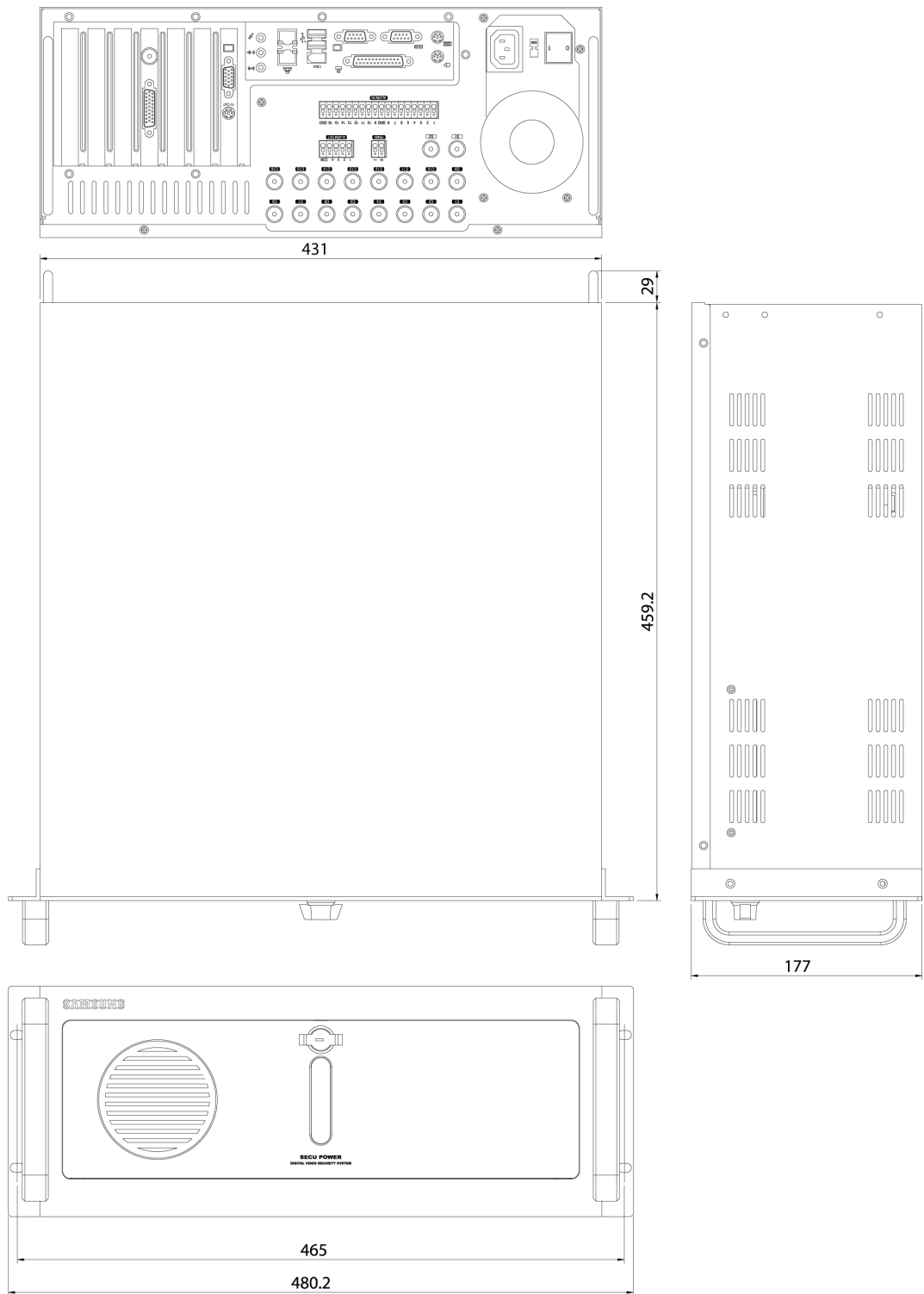
1. Launch **Start→Programs→RealVNC→Run VNC Viewer**.
2. Click on the **Option** button and then select the **Colour & Encoding** tab.
3. Set the **color level** to **Full** (all available colours) and then click on the **OK** button.



SPECIFICATIONS

Category		SPR-9816	SPR-9716
Main Processor(CPU)		Intel Dual Core E2160 or Higher	
Main Memory(RAM)		DDR2 512 MB	
Main Board		i945G-IGA	
VGA		ATI X300SE	
H.D.D.		Western Digital 250 GB(SATA) or Higher	
DVD-RW		TS-H652(IDE)TSST	
LAN		10/100Mbps	
O. S		Microsoft Windows XP Embedded	
Power Supply		SPC-500-12VW(400W)	
Video	Capture Board	SDC-5300	SDC-5100
	Input	BNC 16 Ports(CVBS)	
	Monitor Out	D-sub 1 Port(VGA), BNC 1 Port(CVBS)	
	Spot Out	BNC 2 Ports(CVBS)	
Audio	Input	D-sub 1 Port(16 Channel Cable)	
	Output	Stereo 1 Port	
Display	Max ips@CIF	NTSC(480)/PAL(400)	
	Division	1 / 4 / 6 / 9 / 10 / 13 / 16	
Recording	Max ips@CIF	NTSC(480)/PAL(400)	NTSC(120)/PAL(100)
	Resolution	NTSC(704 x 480, 704 x 240, 352 x 240) PAL(720 x 576, 720 x 288, 352 x 288)	
	Type	Continuous, Motion, Object Watch, Alarm In, Pre Alarm, POS, Instant REC, Video Loss	
ALARM IN/ALAM OUT		16 Ports/4 Ports	
PTZ		Supported (RS485, RS422, COM1, COM2(Optional))	
Keypad		Supported (RS485)	
ATM/POS		Supported (COM1)	
Remote S/W		Supported	
Network		Static IP, DHCP, ADSL(PPPoE), DDNS	
Backup	Media	USB, HDD, DVD-RW	
	Type	TIME, AVI, SFX, BMP, JPEG	
Dimension		480(W) x 460(D) x 176(H)	
Weight		16 Kg	
Power		110/220 Selectable, AC 100~240V 50/60Hz, 400W Max	

OUTLINE DRAWINGS



TROUBLESHOOTINGS(FAQ)

PROBLEM	SOLUTION
Can't turn ON the power of the system	<ul style="list-style-type: none">• Check if the computer's power cables are all connected properly.• Check the input voltage.• If you can't find any wrong connection, but you still can't turn on the power, you have to contact the service center or technicians.
Power is turned ON, but all you can see is a blue screen.	<ul style="list-style-type: none">• Check if the monitor's power cables are all connected properly.• Check if the monitor's power button is switched ON.• Check if the output data cable of SPR-9816/9716 system is properly connected to the monitor.• Disconnect the power cable and then re-connect.• If your monitor has a selectable inputs, make sure you select VGA mode for input and wait for at least one minute for the screen to appear.
Camera numbers are displayed on the screen, but can't see any visual transferred from camera.	<ul style="list-style-type: none">• Check if the output data cable from cameras are properly connected to SPR-9816/9716 system.• Check if the cameras' power cables are all connected properly.• Check the cable connections between camera and SPR-9816/9716.• If video signals are sent to multiple systems. Sometimes a video splitter can cause a weak signal and there can be no signal to the system display. In this case, connect the camera directly to the system to avoid this problem.• Try to reboot the SPR-9816/9716 system.
Video images are displayed, but there are no recordings.	<ul style="list-style-type: none">• Check if you have set a recording method in the recording setting. If it is set to 'NONE', you have to set it with a recording mode. .• Try to reboot the SPR-9816/9716 system.
Can't find recorded images.	<ul style="list-style-type: none">• Check search timeline to see if video images were recorded at the time you expect to have recording.• If no video images were recorded at the time zone, check the setup screen to find if recording method is properly set.
Can't hear audio from the outputs.	<ul style="list-style-type: none">• Check if the cameras' Audio Save Option is set properly.• Check if Audio Play Option is selected on the Search Screen.• Check if microphone and speaker are properly connected to the rear of SPR-9816/9716 system.• Check if the connected microphone input is working properly.• Check if the connected speaker output is working properly.

PROBLEM	SOLUTION
Some cameras show video images in weird colors or abnormal shapes..	<ul style="list-style-type: none"> • Check the cameras connected to the system. Switch the camera that displays defected images with the another camera that displays images correctly, then you can check which camera is not working properly or whether SPR-9816/9716 system is defected. • Check camera video format types. Countries around the world use different video broadcasting standards such as PAL, NTSC, or SECAM. However each standard is incompatible with the other in terms of video image transmission method and the video image processing methods. In this case, video images will be displayed, but not in recognizable shape. Check the video format type sent from connected cameras and image processing method set in [System Menu] are identical.
Displayed video signals have a lot of noise.	<ul style="list-style-type: none"> • Check the cameras connected to the system. Switch the camera that displays defected images with the another camera that displays images correctly, then you can check which camera is not working properly or whether SPR-9816/9716 system is defected. • Check the cable connections between camera and SPR-9816/9716. Check that these cables are not shorted, mixed or disconnected. • Check the surroundings of cable connections between camera and SPR-9816/9716. Check if there is any high-voltage power line around the cable connections. If there is a high-voltage power line nearby the cable connections, it can degrade video image quality or causes noises. • Check the cable connections between camera and SPR-9816/9716. Check if the cables are the correct type for transferring video signals. If you have used for example power cables for video image transmission, it can cause noise on the displayed video image.
Sometimes the system reboots without any cause.	<ul style="list-style-type: none"> • If SPR-9816/9716 is not working properly, or there is malfunction, the embedded self diagnosis feature might cause the system to reboot.
Connected sensors are not working properly.	<ul style="list-style-type: none"> • Check the sensor types set in Camera Setup menu are identical with the sensors actually connected to the system. • Check if the system's sensors are enabled in the [Recording Setup]-[Recording Schedule] menu. • Check if the sensors are correctly connected to power source. • Check if the sensors' signal lines are correctly connected.
Connected control devices are not working properly.	<ul style="list-style-type: none"> • Check if the control devices are enabled in the Camera Setup menu. • Check if the control devices are correctly connected to power source. • Check if the signal lines of the control devices are correctly connected.

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